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SO <u> </u> CC <u> </u> PO <u> </u> TC <u> </u> Other <u> </u>	cy 2 of Manual for Receiving Essential Materials			
Inclosures <u> </u>				

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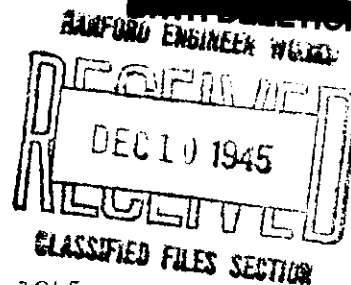
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P. O. Box 100 RICHLAND, WASHINGTON

EXPLOSIVES DEPARTMENT—TNX

Copies #1, , #3 - The Area Engineer:
Attn: Capt. M. R. Barrett

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December 3, 1945

THE AREA ENGINEER
HANFORD ENGINEER WORKS

THIS DOCUMENT CONSISTS OF 7 PAGES NO. 1
OF 1 COPIES, SERIES 1
plus attach.

ATTENTION: CAPT. M. R. BARRETT

MANUAL FOR RECEIVING ESSENTIAL MATERIALS

Transmitted herewith are copies #23 and #24 of the
manual dated September 1945 containing the procedures for
receiving essential materials.

B. H. Mackey
B. H. MACKEY, REMAKER
HANFORD ENGINEER WORKS

CPH:ia

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INTER-OFFICE MEMORANDUM

To: CAPT. M. K. BARRETT, (COPIES #23, 24)

Date OCTOBER 25, 1945

DECLASSIFIEDSubject REVISION - STANDARD PROCEDURE FOR
RECEIVING ESSENTIAL MATERIALS. -
EXCERPT 3-2177

Please insert the attached revisions, in your copy of the Manual
"Standard Procedure for Receiving Essential Materials", and return
the following deleted pages to the writer at Building 3706.

<u>Page</u>	<u>Subject</u>	<u>Revised</u>
50	Nitric Acid - 200 lbs	

G. W. SHERMAN, CHIEF SUP'V.
LABORATORIES DIV., TECH. DEPT.

Per E. C. Morris

DECLASSIFIED W

September 27, 1945

DECLASSIFIEDSUBJECT: MANUAL FOR RECEIVING ESSENTIAL MATERIALS

The attached Manual For Receiving Essential Materials is an attempt to establish a means for obtaining materials of necessary quality for use at HEW. Accordingly, the specifications set forth therein are those applicable at the date of writing and are subject to change. It is expected that numerous changes will be recommended in view of additional experience that has been gained with various materials. Such recommended changes should be made by memorandum to the department head of the Area using the material and to the Technical Superintendent's Office, in accordance with procedure outlined in the Introduction. Revised specifications, analytical methods, etc. will be issued, if the required approval is granted.

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G. W. STRUIHERS, CHIEF SUP'V.
LABORATORIES DIV., TECH. DEPT.

per E. C. Morris
E. C. Morris, Area Supervisor

DECLASSIFIED

DATE: 11/1/77

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TO: Capt. M. K. Barrett (copy 23 and 24)

SUBJECT: REVISION - STANDARD PROCEDURE FOR RECEIVING ESSENTIAL
MATERIALS - DOCUMENT 3-3177

Please insert the attached revisions, in your copy of the Manual,
"Standard Procedures For Receiving Essential Materials", and return
the following deleted pages to the writer at building 3706.

<u>Pages</u>	<u>Subject</u>	<u>Remarks</u>
24	REVISION TO PROC. FOR RECV. ESSENTIAL MAT.	
25	REVISION TO PROC. FOR RECV. ESSENTIAL MAT.	

G. W. STRUTHERS, CHIEF SUP'V.
LABORATORIES DIV., TECH. DEPT.

Per E. J. [Signature]

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By Authority of RLO-CG-4

C.A. BAUMAN/PNL-CO 4-30 91

By C. MASON 5/10/91
PM Eick 1-19 99

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING
ESSENTIAL MATERIALS

This Document consists of
4 Pages No. 2 of 2
~~RESTRICTED~~ PAGES
AND 5 UN-CLASSIFIED PAGES

IN-4222-DEL

PREPARED BY

DU PONT TECHNICAL DEPARTMENT

LABORATORIES DIVISION

SEPTEMBER 1945

COPY NO. 23

ISSUED TO: Capt. M.K. Barrett

HANFORD ENGINEER WORKS

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STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

1. **Manuals:** The subject manuals are issued by the Laboratories Division of the Technical Department. This Division will be responsible for distribution of the manuals, making authorized revisions, editing, etc. For information with respect to the manuals, please address any communications to Chief Supervisor, Laboratories Division, Building 3706.
2. **Purpose:** These procedures are presented for the purpose of standardizing the methods of receiving and accepting Essential Materials purchased for use on this Works.
3. **Specifications:** The specifications given herein are those applicable at the date of writing and are subject to change.
4. **Tests:** The constituents listed under this heading are those which are actually checked by analysis. The analyses performed are subject to change as additional experience is gained.
5. **Sampling:** All Essential Materials are sampled by a representative of the department which uses the material. The necessary containers can be procured from the laboratory to which the sample is delivered. Sampling shall be made in accordance with the procedures set forth in the manual titled "Sampling Methods and Sample Summaries".

Hanford Engineer Works
September, 1945

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ANALYTICAL REPORTS

The original individual analytical work reports are filed in the Laboratories Division Office, Building 3706.

A daily summary of analyses on Essential Materials will be issued by the Laboratories Division of the Technical Department. Copies of this report are distributed at the present time, as follows:

<u>No. of Copies</u>	<u>Office</u>
1	Area Engineer
1	Essential Material Control
3	Accounts Payable
1	"S" Superintendent
1	"P" Superintendent
1	Power - Field Office
1	Technical - Power Superintendent
1	Laboratories Division - File

This summary includes a positive statement to the effect that materials comply with specifications; where specifications are not met, the specific items wherein there is non-compliance are set forth definitely.

Where Essential Materials do not meet specification requirements they will be rejected except where prior approval for use is obtained as outlined under "Out-of-Specification Materials" p. VII. If such approval is obtained, it will be stated that the material is acceptable for use, otherwise it will be stated that it is rejected.

Hanford Engineer Works
September, 1945

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OUT-OF SPECIFICATION MATERIAL

If any material fails to meet specifications, the Laboratories Division will notify the Technical Superintendent and the Superintendent of the consuming Area. The material will not be used unless it is necessary, and unless there is dual approval by these two offices. Said approval may be obtained orally in order to make necessary material available, but in each case, a written statement signed by both offices to the effect that the material is deemed suitable for use, even though specifications are not met, will be obtained. The origination of this memorandum shall be the responsibility of the Laboratories Division - Technical Department. The completed form will comprise part of their file records.

In the absence of the above approval, the material will be rejected.

Where numerous shipments are on the lower limits of quality or below specifications, the Laboratories Division will supply the Accounting Department with this information in order that the Control Division in Wilmington can be advised and a formal complaint made to the vendor.

Hanford Engineer Works
September, 1945

REVISIONS

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~~REVISIONS~~

Recommendations for revision to specifications on Essential Materials must be sent to the offices of the Technical Superintendent and the interested Operating Area Superintendent, as well as to the Laboratories Division of the Technical Department (Att: Chief Supervisor, Building 3706). The copy sent to the Laboratories Divisions will be used for approval signatures of the above offices, and will be the authority for issuance of revisions to the Essential Material Manual. No changes in existing specifications will be made without the dual approval of these offices.

Hanford Engineer Works
September, 1945

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Acenaphthene - 300 Area

1. Specification: HEW Specification #301
 - a) Melting point 92.5 - 95.0°C
2. Test for:
 - a) Melting Point
 - b) Solubility
3. Sampling: An 8 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.
4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved J. J. Grier

Approved _____

Date 9/26/45

Date _____

Benjamin R. Rogers
9/26/45

3 3177
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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Alum, Commercial Grade, 100 Area

1. Specifications: None
2. Test for: Analyzed on request only
3. Sampling: A 16 oz. sample shall be delivered to the Essential Material Laboratory, Building 3706 with each request for analyses.

E. I. du Pont de Nemours
Technical Superintendent

Approved *[Signature]*

Date *4/24/45*

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin T. Rogers
1/26-45

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Section -3-

3 3177

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS**DECLASSIFIED**Aluminum - 300 Area

1. Specification: HEW Specification #302

- | | |
|------------------------------------|------------|
| a) Copper | 0.20% Max. |
| b) Iron | 0.50% Max. |
| c) Manganese | 0.03% Max. |
| d) Magnesium | 0.03% Max. |
| e) Zinc | 0.03% Max. |
| f) Nickel | 0.03% Max. |
| g) Tin | 0.03% Max. |
| h) Acid Insoluble (Reported as Si) | 0.10% Max. |

2. Test for:

- | |
|------------------------------------|
| a) Copper |
| b) Iron |
| c) Manganese* |
| d) Magnesium* |
| e) Zinc* |
| f) Nickel* |
| g) Tin* |
| h) Acid Insoluble (Reported as Si) |

*Analysis for these constituents to be made on a composite sample from every five consecutive shipments received.

If analysis of the composite indicate the material to be out -of- specifications, each individual sample in the composite will be analyzed separately.

3. Sampling: Three ingots or bars from each lot shall be delivered to the Essential Material Laboratory Building 3706.

Rev. 6/1/46

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Page 2

3 3177

4. Allowable Tolerance: None

5. Revision #1, June 1, 1946

DECLASSIFIED
~~WITH DECLASS~~E. I. du Pont de Nemours
Technical SuperintendentCorps of Engineers
Chief of Production

Approved

M. C. Ray

Approved

George E. Williams

Date

6/1/46

Date

June 1, 1946DECLASSIFIED WITH ~~DECLASS~~

CO. 6/1/46

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSAluminum Cans - 300 Area

1. Specification: HEW Specification # 303

a) Copper	0.20% Max.
b) Iron	0.50% Max.
c) Manganese	0.03% Max.
d) Magnesium	0.03% Max.
e) Zinc	0.03% Max.
f) Nickel	0.03% Max.
g) Tin	0.03% Max.
h) Acid Insoluble (Reported Si)	0.10% Max.

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2. Test for:

- a) Copper
- b) Iron
- c) Manganese*
- d) Magnesium*
- e) Zinc*
- f) Nickel*
- g) Tin*
- h) Acid Insoluble (Reported as Si)

*Analysis for these constituents to be made on a composite sample from every five consecutive shipments received.

If analysis of the composite indicate the material to be out -of- specifications, each individual sample in the composite will be analyzed separately.

3. Sampling: Three cans from each shipment or lot shall be submitted to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

5. Revision #1, June 1, 1946

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E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *E. C. Kay*

Approved *for [unclear] [unclear]*

Date *6/7/46*

Date *12 June 1946*

Rev. 6/1/46

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Section -5-

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HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSAluminum Caps - Boss Type - 300 Area**DECLASSIFIED**

1. Specification: HEW Specification # 304

a) Copper	0.20% Max.
b) Iron	0.50% Max.
c) Manganese	0.03% Max.
d) Magnesium	0.03% Max.
e) Zinc	0.03% Max.
f) Nickel	0.03% Max.
g) Tin	0.03% Max.
h) Acid Insoluble (Reported as Si)	0.10% Max.

2. Test for:

- a) Copper
- b) Iron
- c) Manganese*
- d) Magnesium*
- e) Zinc*
- f) Nickel*
- g) Tin*
- h) Acid Insoluble (Reported as Si)

*Analysis for these constituents to be made on a composite sample from every five consecutive shipments received.

If analysis of the composite indicate the material to be out -of- specifications, each individual sample in the composite will be analyzed.

3. Sampling: Three caps from each shipment or lot shall be delivered to the Essential Material Laboratory, Building 3706.

Rev. 6/1/46

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Page 2

4. Allowable Tolerance: None

5. Revision #1, June 1, 1946.

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E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved

E. I. du Pont de Nemours

Date

6/1/46

Approved

W. H. S. Spencer

Date

*10 June 1946*DECLASSIFIED ~~WITH DELETIONS~~Rev. 6/1/46 

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSAluminum Caps - Detail B - 300 Area**DECLASSIFIED**

1. Specifications: HEW Specifications # 305

a) Copper	0.20% Max. WITH DELETIONS
b) Iron	0.50% Max.
c) Magnesium	0.03% Max.
d) Manganese	0.03% Max.
e) Zinc	0.03% Max.
f) Nickel	0.03% Max.
g) Tin	0.03% Max.
h) Acid Insoluble (Reported as Si)	0.10% Max.

2. Test for:

- a) Copper
- b) Iron
- c) Magnesium*
- d) Manganese*
- e) Zinc*
- f) Nickel*
- g) Tin*
- h) Acid Insoluble (Reported as Si)

*Analysis for these constituents to be made on a composite sample from every five consecutive shipments received.

If analysis of the composite indicate the material to be out -of- specifications, each individual sample in the composite will be analyzed separately.

3. Sampling: Three caps from each shipment or lot shall be delivered to the Essential Materials Laboratory, Building 3706.

4. Allowable Tolerance: None

5. Revision # 1, June 1, 1946

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WITH EXEMPTIONS

E. I. duPont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved

M. C. Ray

Date

6/7/46

Approved

[Signature]

Date

10 June 1946

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIAL

Aluminum - Silicon - 300 Area

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2. Test for:

- a) Silicon
- b) Copper
- c) Iron
- d) Manganese
- e) Magnesium
- f) Zinc
- g) Nickel
- h) Tin
- i) Aluminum (by difference)

3 3177

3.. Sampling: Three ingots or bars from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

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E. I du Pont de Nemours
Technical Superintendent

Approved

L. Squires

Date

7/26/45

Corps of Engineers
Chief of Production

Approved

Date

B. R. Rogers
9/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Ammonium Silico Fluoride (Ammonium Fluosilicate) 200 Area

1. Specifications: HEW Specification #28
 - a) Ammonium Silico Fluoride 98.0% Min.
 - b) Water Insolubles 0.30% Max.
2. Test for:
 - a) Ammonium Silico Fluoride
 - b) Water Insolubles
3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.
4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Argon - 300 Area

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1. Specifications: Contract #1, Expires 3/1/46
 - a) Must pass "use" test.
2. Test for:
 - a) Must pass "use" test as applied by Production department
3. Sampling: Each cylinder is tested by trying it for its intended use.
4. Allowable Tolerance - The material must be suitable for its intended use.

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *J. J. J. J.*

Approved _____

Date 9/26/45

Date _____

Benjamin Royce
9/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Barium Chloride, Powdered - 300 Area

1. Specifications: HEW Specification #308

- | | |
|----------------------------------|--------------|
| a) Insolubles | 0.010% Max. |
| b) Alkali Salts as SO_4 | 0.050% Max. |
| c) Strontium & Calcium Chlorides | 0.01% Max. |
| d) Nitrate and Chlorate | to pass test |
| e) Heavy Metals | to pass test |

2. Test for:

- | | |
|----------------------------------|------------------|
| a) Insolubles | |
| b) Alkali Salts as SO_4 | |
| c) Strontium & Calcium Chlorides | |
| d) Nitrate & Chlorate | ACS test '41 p35 |
| e) Heavy Metals | ACS test '41 p35 |

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerances: None

E. I. du Pont de Nemours
Technical Superintendent

Approved L. Squires

Date 4/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin S. Rogers
7/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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Bismuth Subnitrate - 200 Area

1. Specification: Contract #17, Expires 8/31/45

a) Bi_2O_3 79% Min.
(Bi 71% Min.)

b) Contract carries specification test procedures

2. Test for: *

a) Bi

b) Chlorides

c) Nitric Acid Insoluble

d) Hydrochloric Acid Insolubles

* Testing procedures must duplicate those in contract.

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS WITH DELETIONS

Bronze - 300 Area

2. Test for:

a) Copper

b) Tin

3. Sampling: Three ingots or bars from each shipment or lot shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. J. J. J.

Approved _____

Date 9/26/45

Date _____

Benjamin Royce
1/26-45

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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Calcium Chloride (Anhydrous) - 300 Area

1. Specifications: HEW Specification # 331

- a) Calcium Chloride 94.0% Min.
- b) Water Insolubles 0.20% Max.

2. Test for:

- a) Calcium Chloride
- b) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Materials Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved

Approved

Date 6/7/46

Date 6/7/46

6/7/46

[REDACTED]

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HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS**DECLASSIFIED****WITH DELETIONS**Carbon Tetrachloride - 300 Area

1. Specifications: HEW Specification #310

- | | |
|---------------------------|---|
| a) Boiling range @ 760 mm | 75.0° : - 77.5° |
| b) Acid | Neutral to methyl red |
| c) Residue | 0.002% Max. |
| d) Appearance | Clear, colorless, no suspended material |

2. Test for:

- a) Boiling range
- b) Residue
- c) Appearance

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: Boiling range 73.0° C Min.

5. Revision #1, January 18, 1946.
Revision #2, November 1, 1946.

General Electric Company
Technical Superintendent

Corps of Engineers
Chief of Production

Approved

A.B. Gieninger

Date

11-1-46

Approved

Date

11-6-46

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

3 3122
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WITH DELETIONS

Ceric Ammonium Nitrate - 200 Area

1. Specifications: HEW Specification #3

- a) Ceric Ammonium Nitrate 90.0% Min.
- b) Chlorides 0.01% Max.
- c) Nitric Acid Insoluble 0.30% Max.

2. Test for:

- a) Ceric Ammonium Nitrate
- b) Chlorides
- c) Nitric Acid Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *E. I. du Pont*

Approved *Ben. R. - Rogers*

Date *9/26/45*

Date *9/24/45*

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

DECLASSIFIED
WITH DELETIONS

Chlorine, Commercial Grade - 100 & 200 Areas

1. Specifications: Contract #28, Expires 7/31/46

- | | |
|-----------------|--------------|
| a) Chlorine | 99.996% Min. |
| b) Non Volatile | 0.004% Max. |
| c) Copper | 0.0001% Max. |
| d) Iron | 0.0015% Max. |

2. Test for: To be analyzed on request only.

3. Sampling: Due to the safety hazards involved no rampine
samplars are taken..

4. Allowable Tolerance

Chlorine	99.9% Min.
----------	------------

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

Benjamin T. Rogers
1/26-45

DECLASSIFIED WITH DELETIONS

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Copper - 300 Area

1. Specifications: HEW Specification #311

a) Copper

99.90% Min

2. Test for:

a) Copper

3. Sampling: Three ingots or bars from each shipment or lot shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

DECLASSIFIED ~~WITH DELETIONS~~

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

3 3177
DECLASSIFIED
WITH DELETIONS

COAL - ALL AREAS

1. Specifications: None
2. Test for:
 - a) Moisture
 - b) Volatile Matter *
 - c) Fixed Carbon *
 - d) Ash *
 - e) Sulfur *
 - f) Heating value in BTU *

* Results calculated on dry basis

3. Sampling: (a) On long term contracts every tenth car from each vendor is sampled. This sampling frequency also applies to coal secured on "spot purchases" except where it is used for test purposes in which event samples are taken more frequently.

(b) For each car sampled an 8 oz sealed bottle of 60 mesh coal and a five pound "as received" sample shall be delivered to the Essential Material Laboratory, Building 3706.

4. Remarks: (a) Analytical results are reported on a dry basis where indicated.

(b) The average analyses of coal supplied from each source must approximate the "typical analysis" set forth in the contract for each respective vendor.

(c) Contract giving "typical analysis" are now in effect with the following vendors:

Sheridan Wyoming - Contract #41, Expires 6/30/46
Big Horn - Contract #36, Expires 6/30/46

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved [Signature]

Approved [Signature]

Date 5/19/46

Date 9/6/45 ^{may} CE

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3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

DECLASSIFIED
WITH DELETIONS

Coal - Village

1. Specifications: None
2. Test for:
 - a) Moisture
 - b) Volatile Matter*
 - c) Fixed Carbon*
 - d) Ash *
 - e) Sulfur*
 - f) Heating Value in BTU*

*Results calculated on dry basis

3. Sampling: A sample shall be taken from the pile equivalent to every tenth car or once a week, whichever is less, and shall be delivered to the Essential Material Laboratory, Building 3706.

Increments of one shovelfull each shall be taken at equidistant points around the circumference of the pile about midway from the top to the bottom until ten shovelfulls have been separated. Three large lumps shall be added to this amount and the entire quantity reduced to 1/2" size. This "gross sample" shall be quartered until approximately ten pounds of coal remains for delivery to the laboratory.

4. Remarks: (a) Analytical results are reported on a dry basis where indicated.

(b) The laboratory will conduct the final preparation of the sample for analysis.

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *E. I. du Pont*

Approved *Samuel T. Rogers*

Date 9/26/45

Date 9/26-45

-18-

3-517

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS**DECLASSIFIED**
~~WITH DELETIONS~~DuPontol, M3 Dry - 300 Area

1. Specifications: None

2. Test for:

Material analyzed on request only.

3. Sampling:

A 16 oz. sample shall be delivered to the Essential Material Laboratory, Building 3706 with each request for analysis.

4. Remarks:

Tests are run on this material for identification purposes only.

5. Revision #1 November 1, 1946

General Electric Company
Technical Superintendent

Approved

AB [Signature]

Date

11-1-46Corps of Engineer
Chief of Production

Approved

Harvey E. Skinner

Date

11-6-46DECLASSIFIED ~~WITH DELETIONS~~

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSFerric Sulfate (Ferrifloc) - 100 Area**DECLASSIFIED**~~WITH DELETIONS~~

1. Specification: Contract #605, Expires 10/31/45

"Typical Analysis" as given in contract"

a) $\text{Fe}(\text{SO}_4)_3$	75% (72% Min)
b) Fe SO_4	0.8%
c) Si O_2	0.7%)
d) Other insolubles	3.0%) 5% Max.
e) Calcium	0.25%
f) Magnesium	0.08%
g) Alumina	0.30%) 0.5% Max.
h) Copper	0.05%
i) Zinc	0.08%
j) Lead	0.07%
k) Water of crystallization	12.2%
l) Remaining water of crystallization	2.0%
m) Sulfates other than iron	4.0%
n) Free acid	1.0%

2. Test for:

- a) Total water
- b) Iron
- c) Water insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 5706.

4. Remarks: "Ferrisol" is sometimes purchased in place of "Ferrifloc". See page 19A for description.

 **DECLASSIFIED** ~~WITH DELETIONS~~

3 317

5. Allowable Tolerance:

- | | |
|---------------------|------------|
| a) Total water | 14.5% Max. |
| b) Iron | 20.4% Min |
| c) Water insolubles | 11.0% Max. |

DECLASSIFIED
WITH DELETIONS

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. J. [Signature]

Approved _____

Date 9/26/45

Date _____

Benjamin T. Rogers
9/26-45

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Ferric Sulfate (Ferrisol) - 100 Area

3 31274
DECLASSIFIED
~~WITH DELETIONS~~

1. Specification: Contract #605, Expires 10/31/45

This material is purchased under the same contract to supplement the supply of "Ferrifloc" and is acceptable for use if it meets the requirements set forth in paragraph 4.

2. Test for:

- a) Total Water
- b) Iron
- c) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance:

- a) Total Water 1.0% Max.
- b) Iron 25.0% Min
- c) Water insolubles 11.0% Max.

E. I. du Pont de Nemours
Technical Superintendent

Approved *[Signature]*

Date 9/26/45

Corps of Engineers
Chief of Production

Approved *[Signature]*

Date 9/24/45


DECLASSIFIED ~~WITH DELETIONS~~

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3-3177-
HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSFluosilicic Acid - 500 Area**DECLASSIFIED**
~~WITH DELETIONS~~

1. Specification: HEW Specification #312

- a) Grade CP or reagent grade
- b) Assay as H_2SiF_6 20-30%
- c) Non Volatile 0.25% Max.
- d) Chlorides 0.02% Max.
- e) Sulfates 0.05% Max.

2. Test for:

- a) Assay as H_2SiF_6
- b) Non Volatile
- c) Chlorides
- d) Sulfates

3. Sampling:

A 1 lb. sample in the original container from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance:

5. Revision #1 November 1, 1946

General Electric Company
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *AB Trimmer*Approved *Harry E. ...*Date 11-1-46Date 11-6-46
ORD ENGINEER WORKS
DECLASSIFIED ~~WITH DELETIONS~~

- 22 -

3-3177

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSHydrofluoric Acid - 300 Area**DECLASSIFIED**
~~WITH SELECTIONS~~

1. Specification: None

2. Test for:

Material analyzed on request only.

3. Sampling:

Due to the safety hazards involved, no samples are taken.

4. Remarks:

Samples may be submitted for analysis upon special request.

5. Revised: 10-30-46

General Electric Company
Technical Superintendent

Approved

W.B. Greninger

Date

11-1-46Corps of Engineers
Chief of Production

Approved

Harvey J. Skinner

Date

11-6-46

DECLASSIFIED W

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Hydrogen Fluoride - 200 Area

DECLASSIFIED

1. Specification: None
2. Test for: Not analyzed
3. Sampling: Due to the safety hazards involved, no samples are taken.

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved [Signature]

Approved _____

Date 7/26/45

Date 19/26-48
[Signature]

REIVING ESSENTIAL MATERI

[Redacted]

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Hydrogen Peroxide - 200 Area

1. Specification: HEW Specification #24

a) Hydrogen peroxide - 27.5% Min.

b) Iron 0.5 ppm

2. Test for:

a) Hydrogen peroxide

b) Iron

3. Sampling: A 16 oz. sample from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. [unclear]*

Date *7/26/45*

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin R. Rogers
7/26-45-1

DECLASSIFIED

WITH DELETIONS

3 3177

~~SECRET~~

DECLASSIFIED WITH DELETIONS

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Hydromite - 300 Area

1. Specifications: None
2. Test for:
 - a) pH
 - b) Solubility in water
 - c) Chlorides
 - d) Flash Point
 - e) Fire Point
3. Sampling: A 16 oz. sample from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.
4. Remarks: Tests are run on this material for identification purposes only.

W.
E. I. du Pont de Nemours
Technical Superintendent

Approved E. I. du Pont

Date 9/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

B. J. Royce
19/26-457

3 3177
DECLASSIFIED
~~RESTRICTIONS~~

~~RESTRICTIONS~~
DECLASSIFIED ~~RESTRICTIONS~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Lanthanum Ammonium Nitrate - 200 Area

1. Specification: Contract #26, Expires 9/30/46

- a) Lanthanum 23.0% Min.
- b) Nitric Acid Insolubles (80°C) 0.10% Max.
- c) Chlorides 0.01% Max.

2. Test for:

- a) Lanthanum
- b) Insolubles
- c) Chlorides

3. Sampling: A 16 oz. sample from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved E. I. du Pont

Date 9/26/45

Corps of Eng
Chief of Proj

Approved _____

Date _____

Benjamin T. Rogers
9/26-45-1

DECLASSIFIED

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Hydrated Lime, Type A - 100 Area

1. Specifications: HEW Process Specification #107

a) Lime (CaO)	74.0% Min.
b) Silica (SiO ₂)	0.25% Max.
c) Aluminum & Iron Oxides	0.50% Max.
d) Chlorides	0.03% Max.
e) Heavy Metals (Pb)	0.03% Max.
f) Fineness	20 Mesh - 100% 100 Mesh - 99% 200 Mesh - 98%

2. Test For:

- a) Lime (CaO)
- b) Silica (SiO₂)
- c) Aluminum & Iron oxides
- d) Chloride
- e) Heavy metals (Pb)
- f) Fineness

3. Sampling: A 16 oz. sample from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved [Signature]

Date 7/2/45

Corps of Engineers
Chief of Production

Approved [Signature]

Date 7/26/45

3 3177
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WITH DELETIONS

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HANFORD

STANDARD PROCEDURE FOR

ESSENTIAL MATERIALS

Hydrated Lime, Type B - 100 Mesh

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~~WITH DELETIONS~~

1. Specifications: HEW Specification # 108
Fineness 20 Mesh - 100%
100 Mesh - 95%

2. Test for:

Fineness

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Remarks: This material is purchased under Contract #38 which expires 9/30/45. No specifications are entered in the Contract.

5. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. [unclear]*

Date *9/20/45*

Corps of Engineers
Chief of Production

Approved

Date

Benjamin T. Rogers
9/20/45


DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS**DECLASSIFIED**
~~WITH DELETIONS~~Magnesium - 300 Area

1. Specifications: HEW Specification # 332

- | | |
|--------------|----------------|
| a) Magnesium | (Distilled) |
| b) Iron | • 50 ppm. Max. |
| c) Manganese | 50 ppm. Max. |
| d) Boron | 50 ppm. Max. |
| e) Cadmium | 50 ppm. Max. |

2. Test for:

- a) Iron
- b) Manganese
- c) Boron
- d) Cadmium

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Materials Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

6/7/46

-29-

3-3177-
HANFORD ENGINEER WORKS**DECLASSIFIED**STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS ~~WITH DELETIONS~~Methanol, Synthetic - 300 Area

1. Specification: HEW Specification #314

a) Specific Gravity	0.790 to 0.791 @ 25/25
b) Boiling Range	64 to 66°C
c) Residue on Evaporation	0.01% Max.
d) Color	Water clear
e) Odor	Characteristic
f) Acidity (acetic)	0.005% Max.

2. Test For:

- a) Specific Gravity
- b) Boiling Range
- c) Residue on Evaporation
- d) Color
- e) Odor
- f) Acidity

3. Sampling:

A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

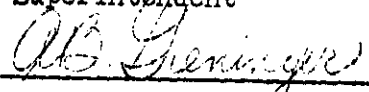
4. Allowable Tolerance: None

5. Revision #1 November 1, 1946

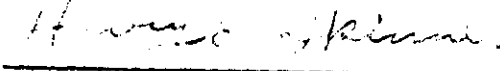
General Electric Company
Technical Superintendent

Corps of Engineers
Chief of Production

Approved



Approved



Date

11-1-46

Date

11-2-46
DECLASSIFIED ~~WITH DELETIONS~~

DECLASSIFIEDSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIAL~~WITH SECTIONS~~Metso "99" (or equivalent) - 300 Area

1. Specifications: HEW Specification # 333

a) Water Insolubles 0.20% Max.

b) Boron 250 ppm Max.

2. Test for:

a) Water Insolubles

b) Boron

3. Sampling: A 16 oz sample of each shipment shall be delivered to the Essential Materials Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical SuperintendentCorps of Engineers
Chief of ProductionApproved [Signature]Approved [Signature]Date 6/7/46Date 6/7/46

6/7/46

DECLASSIFIED WITH ~~SECTIONS~~

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MANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Nacconal M.R. (or equivalent) - 300 Area

DECLASSIFIED
WITH DELETIONS

1. Specifications: HEM Specification # 334

a) Water Insolubles 0.20% Max.

b) Boron 50 ppm Max.

2. Test for:

a) Water Insolubles

b) Boron

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Materials Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved [Signature]

Approved [Signature]

Date 6/7/46

Date 6/7/46

6/7/46

DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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WITH DELETIONS

Nitric Acid - 200 Area

1. Specification: Contract #2, Expires 6/1/46
 - a) Nitric Acid 60% Approximately
 - b) Nitric Oxides 0.05 % Max.
 - c) Chlorides 0.05 % Max.
 - d) Residue on Evaporation 0.02 % Max.
2. Test for:
 - a) Nitric Acid
 - b) Nitric Oxide
 - c) Chlorides
 - d) Residue on Evaporation
3. Sampling: A 16 oz. sample of each shipment shall be delivered to the appropriate 222 Laboratory Building.
4. Allowable Tolerance: Acid purchased on the above contract may vary from 59 - 63 % HNO_3 . Also different strengths may be specifically indicated on individual purchase requisitions, in which case the concentration as shown by analysis should approximate that recorded on the requisition.
5. Revision #1, October 1945

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

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HANFORD ENGINEER WORKS

1252
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~~WITH DELETIONS~~

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Nitric Acid - 300 Area

1. Remarks : This material is received from the 200 Area bulk storage, and analysis is made in the 200 Area.

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. K. [Signature]*

Date *9/26/45*

Corps of Engineers of Engineers
Chief of Production & Production

Approved *[Signature]*

Date *[Signature]*

Bayant Roy [Signature]
9/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Oxalic Acid - 100 Area

3 317
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~~WITH DELETIONS~~

1. Specification: HEW Specification #109

- a) Oxalic acid ($\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$) 99.5% Min.
- b) Water Insolubles 0.10% Max.

2. Test for:

- a) Oxalic acid
- b) Water insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved L. J. [Signature]

Date 9/26/45

Corps of Engineers
Chief of Production

Approved [Signature]

Date 10/26/45


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3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Oxalic Acid - 200 Area

DECLASSIFIED
~~WITH DELETIONS~~

1. Specification: HEW Specification #11

- a) Oxalic Acid $[(COOH)_2 \cdot 2H_2O]$ 99.5% Min.
- b) Water Insolubles 0.05% Max.
- c) R_2O_3 0.05% Max.
- d) Chlorides 0.01% Max.

2. Test for:

- a) Oxalic acid
- b) Water Insolubles
- c) R_2O_3
- d) Chlorides

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *E. I. du Pont*

Approved _____

Date *9/26/45*

Date *9/26/45*

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Potassium Chloride - 300 Area

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~~WITH DELETIONS~~

1. Specification: HEW Specification #316

a) Grade	Powdered
b) Insolubles	0.005% Max.
c) Neutrality	ACS test '41 p. 87
d) Chlorate & Nitrate	
ClO ₃	0.001% Max.
NO ₃	0.005% Max.
e) Nitrogen Compounds (N)	0.001% Max.
f) Phosphates	0.002% Max.
g) Sulfates	0.006% Max.
h) Barium	ACS Test '41 p. 87
i) Ca, Mg, & NH ₄ OH Precipitate	0.005% Max.
j) Heavy Metals (Pb)	ACS Test '41 p. 87
k) Iron (Fe)	" " "
l) Sodium	" " "

2. Test for:

- a) Grade
- b) Insolubles
- c) Neutrality
- d) Chlorate & Nitrate
- e) Nitrogen Compounds
- f) Phosphates
- g) Sulfates

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3 3177

- h) Barium
- i) Ca, Mg, & NH_4OH Precipitate
- j) Heavy metals
- k) Iron
- l) Sodium

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~~WITH DELETIONS~~

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. Quinn*

Date *9/26/45*

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin S. Rogers
9/26-45

~~DECLASSIFIED~~ ~~WITH DELETIONS~~

3 3177

DECLASSIFIED

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Potassium Hydroxide - 200 Area

1. Specification: Contract #40, Expires 6/30/46
"Typical Analysis" as entered in the contract:

a) KOH (Total alkalinity)	85-86.5%
b) KOH (Actual)	approximately 85%
c) K ₂ O (Total alkalinity)	70.5% Min.
d) K ₂ CO ₃	1.0%
e) K ₂ SO ₄ (As Cl)	0.019%
f) NaOH	Trace
g) Fe (guaranteed maximum)	0.005%
h) As	less than 0.05 ppm
i) Pb	Nil
j) SiO ₂	0.005%
k) SO ₃	Trace
l) NO ₃	0.05%
m) CaO + MgO	Nil
n) Ni	Trace
o) Cu	Nil
p) Ba	Nil
q) PO ₄	Nil
r) Mn	0.0002
s) Heavy Metals	0.0002 or less

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2. Test for:

- a) Total K_2O
- b) Iron
- c) Chloride
- d) Water Insoluble

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WITH DELETIONS

3 3177

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

L. D. Miller
9/26/45

Corps of Engineers
Chief of Production

Approved

Date

R. J. Rogers
9-26-45

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HANFORD

KS

STANDARD PROCEDURE FOR

ESSENTIAL MATERIALS

Potassium Permanganate - 200 Area

DECLASSIFIED
WITH DELETIONS

1. Specification: HEW Specification #26

- | | |
|---------------------------|------------|
| a) Potassium Permanganate | 99.0% Min |
| b) Water Insolubles | 0.20% Max. |

2. Test for:

- a) Potassium Permanganate
- b) Water Insolubles

3. Sampling: A 16 oz. sample from each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *L. S. [Signature]*

Approved _____

Date 9/26/45

Date _____

Benjamin T. Rogers
9/26-45

RESTRICTED

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HANFORD ENGINEER WORKS

DECLASSIFIED
~~WITH DELETIONS~~

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Phosphoric Acid - 300 Area

1. Specification: HEW Specification #317

a) Phosphoric Acid	85%
b) Chlorides	0.001% Max.
c) Iron	0.005% Max.
d) Sulfate	0.005% Max.
e) Alkali Phosphates	0.25% Max. (As SO_4)

2. Test for:

- a) Phosphoric Acid
- b) Chlorides
- c) Iron
- d) Sulfate
- e) Alkali Phosphates

3. Sampling:

A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: Phosphoric Acid 83.0% Min.

5. Revision #1 November 1, 1946.

General Electric Company
Technical Superintendent

Approved AB Greninger

Date 11-1-46

Corps of Engineers
Chief of Production

Approved Harvey C. Skinner

Date 11-6-46

 **DECLASSIFIED** ~~WITH DELETIONS~~

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS**DECLASSIFIED**
~~WITH DELETIONS~~Phosphoric Acid - 200 Area

1. Specification: HEW Specification #12

- a) Phosphoric Acid (H_3PO_4) 75%
- b) Chlorides (as Cl) 0.01% Max.
- c) Iron (as Fe) 0.05% Max.
- d) Material must pass following test:
Dilute 10 cc. with 5 cc. of H_2O , add 0.20 cc. of 0.1 N potassium permanganate, heat to boiling, and allow to stand on the steam bath for 10 minutes. The pink color should not be entirely discharged.

The above specifications hold if the material is received in rubber-lined tank cars. In those cases where the material is received in stainless steel tank cars, the following specifications apply.

- a) Phosphoric Acid (H_3PO_4) 73.8%
- b) Chlorides (as Cl) 0.01% Max.
- c) Iron (As Fe) 0.05% Max.
- d) Material must pass following test:
Dilute 10 cc. with 5 cc. of H_2O , add 0.20 cc. of 0.1 N potassium permanganate, heat to boiling, and allow to stand on the steam bath for 10 minutes. The pink color should not be entirely discharged.
- e) Nitric acid (HNO_3) 1.2%

2. Test for:

- a) Phosphoric Acid
- b) Chlorides
- c) Iron
- d) Reducing Materials
- e) Nitric acid if required.

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- 38 -

3-3177-

3. Sampling:

A 16 oz. sample of each shipment shall be delivered to
the appropriate 222 Building Laboratory.

4. Allowable Tolerances: Δ Phosphoric Acid

-0.5%

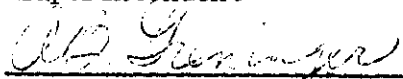
5. Revision #1 - November 1, 1946.

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~~WITH DELETIONS~~

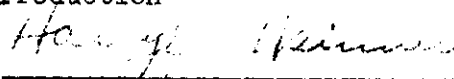
General Electric Company
Technical Superintendent

Corps of Engineers
Chief of Production

Approved



Approved



Date

11-1-46

Date

11-6-46DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKS

Standard Procedure for Receiving Essential Materials

Sodium Bismuthate - 200 Area

1. Specification: HEW Specification #15

- | | |
|----------------------|------------|
| a) Sodium Bismuthate | 80.0% Min. |
| b) Chlorides | 0.01% Max. |
| c) Insolubles | 0.10% Max. |

2. Test for:

- a) Sodium Bismuthate
- b) Chlorides
- c) Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. Quinn*

Date *9/26/45*

Corps of Engineers
Chief of Production

Approved _____

Date _____

Raymond Rogers
9/26-45

DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKSSTANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALSSodium Carbonate Type A - 100 Area**DECLASSIFIED**
WITH DELETIONS

1. Specification: HEW Specification #106

- | | |
|---------------------|-------------|
| a) Sodium Carbonate | 98.0% Min. |
| b) Iron | 0.001% Max. |
| c) Water Insolubles | 0.10% Max. |

2. Test for:

- a) Sodium Carbonate
- b) Iron
- c) Water Insoluble

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *S. J. Quinn*

Approved _____

Date *9/26/45*

Date _____

Bernard T. Royer
9/26-45

DECLASSIFIED WITH DELETIONS

~~SECRET~~
HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Carbonate (Soda Ash) Type B - 100 Aroc

1. Specifications: Contract #16 Expires 7/31/46

"Typical analysis" as given in contract:

a) Sodium Carbonate	99.65%
b) Iron	6 ppm
c) Water insolubles	0.01%
d) $\text{Na}_2\text{B}_4\text{O}_7$	0.10%
e) Na_2O	58.15%
f) NaCl	0.05
g) Na_2SO_4	0.15%
h) As_2S_3	1 ppm
i) Density	45#/ft ³

2. Test for:

- a) Sodium carbonate
- b) Iron
- c) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: Sodium Carbonate 98.0% Min
 Iron 0.001% Max.
 Water insolubles None

E. I. du Pont de Nemours
 Technical Superintendent

Corps of Engineers
 Chief of Production

Approved [Signature]

Approved [Signature]

Date 7/26/45

Date 7/26/45

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3 3177
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~~WITH DELETIONS~~

[Signature]
 7/26-45

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Carbonate - 200 Area

DECLASSIFIED
~~WITH DELETIONS~~

1. Specification: HEW Specification #16

- a) Total Na_2O 57.3% Min.
- b) Water Insolubles 0.10% Max.

2. Test for:

- a) Total Na_2O
- b) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. A. [Signature]*

Date 9/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin T. Rogers
9/26-45

~~SECRET~~
DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

3 3172
DECLASSIFIED

Sodium Chloride (Commercial grade crushed Rock Salt)-100 & 200 Areas

1. Specification: HEW Specification #110

- a) Sodium chloride - 99.0% Min.
- b) Insoluble 0.1% Max.

2. Test for:

- a) Sodium chloride
- b) Insoluble

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Remarks: This material is purchased on Contract #7 which expires 6/30/46. While no specifications are included the average analysis of the material supplied must approximate the "typical analysis" supplied by the vendor and listed below:

- a) Sodium chloride 99.52%
- b) Water Insolubles 0.03%

Other typical constituents are as follows:

- a) Calcium sulfate 0.32%
- b) Magnesium Sulfate 0.05%
- c) Magnesium Chloride 0.08%

5. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. D. Quin

Approved _____

Date 9/26/45

Date 11/24/45

Benjamin T. Rogers
9/24-45

DECLASSIFIED WITH DELETIONS

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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~~WITH DELETIONS~~

Sodium Chloride - 300 Area

1. Specifications: HEW Specification #318

a) Grade	Powdered
b) Insolubles	0.005% Max.
c) Neutrality	ACS Test '41, p 109
d) Chlorate	0.002% Max.
e) Nitrate	0.003% Max.
f) Nitrogen Compounds (N)	0.001% Max.
g) Phosphates	0.0005% Max.
h) Sulfates	0.001% Max.
i) Ca & Mg precipitates	0.005% Max.
j) NH_4OH precipitate	ACS Test '41, p 109
k) Barium	0.001% Max.
l) Heavy Metals (Pb)	0.0005% Max.
m) Iron	0.0003% Max.
n) Potassium	0.01% Max.

2. Test for:

- a) Grade
- b) Insoluble
- c) Neutrality
- d) Chlorate
- e) Nitrate
- f) Nitrogen Compounds
- g) Phosphates

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- h) Sulfates
- i) Ca & Mg precipitates
- j) NH_4OH precipitate
- k) Barium
- l) Heavy Metals
- m) Iron
- n) Potassium

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~~WITH DELETIONS~~

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I du Pont de Nemours
Technical Superintendent

Approved L. Squier

Date 9/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin T. Roy
9/26-45

DECLASSIFIED ~~WITH DELETIONS~~

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Dichromate - 100 Area

DECLASSIFIED

1. Specification: HEW Specification #112

- a) Sodium dichromate ($\text{Na}_2\text{Cr}_2\text{O}_7 \cdot 2\text{H}_2\text{O}$) 98.0% Min.
- b) Water insolubles 0.10% Max.

2. Test for:

- a) Sodium dichromate
- b) Water insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. J. J.*

Date 9/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin T. Rogers
9/26-45

DECLASSIFIED ~~IN FULL~~ ~~EXEMPTIONS~~

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Dichromate - 200 Area

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~~WITH DELETIONS~~

1. Specifications: HEW Specification #17

- a) Sodium dichromate ($\text{Na}_2\text{Cr}_2\text{O}_7$) 86.2% Min.
- b) Sulfates 0.5% Max.
- c) Water Insolubles 0.1% Max.

2. Test for:

- a) Sodium dichromate
- b) Sulfates
- c) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved L. D. Squire

Date 7/26/45

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin T. Rogers
7/26-45

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STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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~~WITH DELETIONS~~

1. Remarks: This material is received from the 200 Area bulk storage and analysis is made in the 200 Area.

Corps of Engineers, Engineer
Chief of Production Section

Approved _____

Date 1 Oct 1964

Benjamin T Royce
19/26-45

[REDACTED]

~~SECRET~~

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Hydroxide, Commercial Grade Caustic Soda - 200 Acre

1. Specification: Contract No. 18, Expires 6/30/46

a) Sodium Oxide	38.9 $\pm 1\%$
b) Sodium Hydroxide	50 $\pm 1\%$
c) Sodium Carbonate	0.30% Max.
d) Sodium Chloride	1.2% Max.
e) Sodium Sulfate	0.08% Max.
f) Sodium Chlorate	0.10% Max.
g) Silica	0.01% Max.
h) Alumina	0.005% Max.
i) Calcium	0.005% Max.
j) Magnesium Oxide	0.005% Max.
k) Iron	0.003% Max.
l) Manganese	0.0001% Max.
m) Copper	0.0002% Max.
n) Nickel	0.0003% Max.

2. Test for:

a) Sodium Oxide

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the appropriate 222 Building Laboratory.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved E. I. du Pont de Nemours

Date 7/26/45

Corps of Engineers
Chief of Production

Approved _____

Date 7/26/45

Benjamin T. Rogers
9126-45
DECLASSIFIED

DECLASSIFIED
WITH DELETIONS

DECLASSIFIED
WITH DELETIONS

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

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WITH DELETIONS

Sodium Nitrate, Commercial Grade - 200 & 300 Areas

1. Specification: HEW Specification #22

- | | |
|---------------------|------------|
| a) Water Insolubles | 0.20% Max. |
| b) Total Nitrate | 60.0% Min. |
| c) Total Chlorides | 0.5% Max. |
| d) Total Sulfates | 1.0% Max. |

2. Test for:

- a) Water insolubles
- b) Total Nitrate
- c) Total Chloride
- d) Total Sulfates

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. J. [Signature]

Approved _____

Date 7/26/45

Date _____

Benjamin St. Rogers
7/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Nitrite - 200 Area

3 3177
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~~WITH DELETIONS~~

1. Specification: HEW Specification #23

- a) Sodium Nitrite, dry basis 99.00% Min.
- b) Moisture 0.30% Max.
- c) Water Insolubles 0.05% Max.
- d) Material must be free running

2. Test for:

- a) Sodium Nitrite
- b) Moisture
- c) Water Insolubles
- d) Material must be free running

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. S. Quinn

Approved _____

Date 9/26/45

Date _____

Bernard V. Rogers
9/26-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

DECLASSIFIED

Sodium phosphate, Dibasic, Commercial Grade - 100 & 200 Areas

1. Specification: None. To be analyzed on request only ~~WITH DELETIONS~~
2. Test for: Specific analysis to be decided upon at the time of the request for analysis.
3. Sampling: A 16 oz. sample shall be delivered to the Essential Material Laboratory, Building 3706 with each request for analysis.
4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved J. J. Sweeney

Approved _____

Date 9/26/45

Date _____

Benjamin I. Rogers
9/26-45

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[REDACTED]

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Pyrophosphate - 300 Area

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~~WITH DELETIONS~~

1. Specification: HEW Specification #320

- a) Sodium pyrophosphate ($\text{Na}_4\text{P}_2\text{O}_7$) 97.5% Min.
- b) Water Insolubles 0.20% Max.

2. Test for:

- a) Sodium Pyrophosphate
- b) Water Insolubles

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved

Date

Corps of Engineers
Chief of Production

Approved

Date

Benjamin Royce
11/26-45

DECLASSIFIED ~~WITH DELETIONS~~

3 3177

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Silicate Aqueous - 100 Area

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WITH DELETIONS

1. Specification: Contract #23. Expires 10/31/45
 - a) Ratio: $\text{SiO}_2/\text{Na}_2\text{O}$ 3.20 ± 0.5
 - b) Specific Gravity @ 60°F 41.0 ± 0.5 Bc
 - c) Na_2O $8.9 \pm 0.2\%$
 - d) SiO_2 $28.5 \pm 0.5\%$

2. Test for:

- a) Specific Gravity
- b) Na_2O
- c) SiO_2

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved *E. I. du Pont*

Approved _____

Date 9/26/45

Date _____

Benjamin T. Rogers
9/26/45

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~~REDACTED~~

3 3177 ~~REDACTED~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sodium Sulfite, Anhydrous, Commercial Grade - 100 & 200 Areas

1. Specifications: HEW Specification #114

- | | |
|--------------------|------------|
| a) Sodium Sulfite | 85.0% Min. |
| b) Sodium Sulfate | 15.0% Max. |
| c) Water Insoluble | 0.5% Max. |

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~~WITH DELETIONS~~

2. Test for:

- a) Sodium Sulfite
- b) Sodium Sulfate
- c) Water Insolubles

3. Sampling: a 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. [unclear]*

Date 7/26/45

Corps of Engineers
Chief of Division

Approved *[Signature]*

Date

Benjamin Rogers
10/24-45

~~REDACTED~~

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Steel Sleeves - 300 Area

1. Specifications: None
2. Test for: Analyzed on special request only.
3. Sampling: If an analysis of this material is desired the Essential Materials Laboratory Supervisor shall be consulted as to the size of the sample to be submitted.

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~~WITH DELETIONS~~

E. I. du Pont de Nemours
Technical Superintendent

Corps of Engineers
Chief of Production

Approved L. Aguirre

Approved

Date 9/26/45

Date 9/24-45
Bayant R. J. Riser

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Sulfuric Acid, Type A - 200 Area

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~~WITH DELETIONS~~

1. Specifications: HEW Specification #20

- | | |
|--|------------------------------|
| a) Sulfuric Acid | 58-60 or 66°Be |
| b) Total Iron | 0.03% Max. |
| c) Organic Matter | 0.02% Max. |
| d) Copper | 0.01% Max. |
| e) Lead | 0.02% Max. |
| f) Nitric Acid and Oxides
of Nitrogen | 0.01% Max. |
| g) Color | Clear, light amber or better |

2. Test for:

- a) Sulfuric Acid
- b) Total Iron
- c) Organic Matter
- d) Nitric Acid and Oxides of Nitrogen
- e) Color

3. Sampling: A 16 oz. sample from each shipment shall be submitted to the appropriate 222 Building Laboratory.

4. Allowable Tolerance: None

5. Revision #1, November 8, 1945

E. I. du Pont de Nemours
Technical Superintendent

Approved [Signature]

Date 11/8/45

Corps of Engineers
Chief of Production

Approved [Signature]

Date 11-10-45

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

J.M. Super-Cell (or other filter Aid) - 100 Area

1. Specification: HEW Specification #102

A. Particle Size

a) Maximum particle size	80 microns
b) 5-15%	24-40 microns
c) 20-35%	12-24 "
d) 28-42%	6-12 "
e) 47% Max.	Less than 6 microns
f) 20% Min.	" " " "

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~~WITH DELETIONS~~

2. Test for:

A Particle Size

3. Sampling: A 16 oz sample of each shipment shall be delivered to the Essential Material Laboratory Building 3706.

4. Remarks: Particle size measurements are made with an Andreasen Sedimentation Pipette.

5. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. Quinn*

Date *7/26/45*

Corps of Engineers
Chief of Production

Approved *B. C. Quinn*

Date *8/2/45*

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HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Tin - 300 Area

3 3177 

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WITH DELETIONS

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WITH DELETIONS

2. Test for:

- a) Antimony
 - b) Arsenic
 - c) Lead
 - d) Bismuth
 - e) Copper
 - f) Iron
 - g) Silver
 - h) Nickel & Cobalt
 - i) Cadmium
 - j) Sulfur
- 

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3. Sampling: Three ingots or bars from each shipment or lot shall be delivered to the Essential Material Laboratory, Building 3706.
4. Allowable Tolerance: None

E. I du Pont de Nemours
Technical Superintendent

Approved L. Aquino
Date 9/26/45

Corps of Engineers
Chief of Production

Approved _____
Date _____

Benjamin T. Rogers
9/24-45

DECLASSIFIED
~~WITH DELETIONS~~

DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Tri - Chloro - Ethylene - 300 Area

DECLASSIFIED
WITH DELETIONS

1. Specification: HEW Specification #323

- | | |
|--------------------------------|---------------|
| a) Distillation range 1st drop | 84.4°C Min. |
| 95% " | 84.4 - 90.0°C |
| b) Total alkalinity (pyridine) | 0.05% Min. |
| c) Residue on Evaporation | 0.05% Max. |
| d) Chlorides | 0.01% Max. |
| e) Water | To pass test |

2. Test for:

- a) Distillation range
- b) Total alkalinity
- c) Residue on Evaporation
- d) Chloride
- e) Water

3. Sampling:

A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Building 3706.

4. Allowable Tolerance: None

5. Revision #1 November 1, 1946

General Electric Company
Technical Superintendent

Corps of Engineers
Chief of Production

Approved AB. Breninger

Approved Harvey H. Hain

Date 11-1-46

Date 11-6-46

DECLASSIFIED ~~WITH DELETIONS~~

HANFORD ENGINEER WORKS

STANDARD PROCEDURE FOR RECEIVING ESSENTIAL MATERIALS

Zirconium Carbonate Gel - 200 Area

1. Specification: Contract #9, Expires 6/30/46

- | | |
|------------------------------------|-------------------------------|
| a) Zirconium Oxide | 19% Min. |
| b) Chlorides | 0.01% Max. |
| c) Nitric Acid Insolubles | 0.30% Max. |
| d) Fluoride precipitate | To pass test
(Paragraph 4) |

2. Test for:

- a) Zirconium oxide
- b) Chloride

3. Sampling: A 16 oz. sample of each shipment shall be delivered to the Essential Material Laboratory, Bldg. 3706.

4. Remarks: The fluoride test is as follows:

Heat the filtrate from the nitric acid treatment for three hours at 75°C , and add HF to make the solution 1N. Any turbidity should not exceed that obtained from the same volume of Na Cl solution (1 ml of 0.33 g. Na Cl per liter diluted to 55 ml.) when acidified with HNO_3 and treated with 1 ml of 2% Ag NO_3 .

5. Allowable Tolerance: None

E. I. du Pont de Nemours
Technical Superintendent

Approved *L. J. [illegible]*

Date *9/26/45*

Corps of Engineers
Chief of Production

Approved _____

Date _____

Benjamin Rogus
9/26-45

DECLASSIFY
WITH DELETION