FORM AEC-374A
(12-57)

U. S. ATOMIC ENERGY COMMISSION
PRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 6

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated January 23, 1958 and supporting information submitted in a letter dated March 4, 1958, License No. 29-209-2 is amended to add the following:

CONDITIONS

17. Sulfur 35 may also be used at American Cyanamid Company, Fortier Plant, Avondale, Louisiana.

For the U. S. Atomic Energy Commission

Original Signed By
by James R. Mason
Division of Licensing and Regulation
Washington 25, D. C.

Date March 31, 1958

JRM/REB 4/11/58

A/8

FORM AEC-374A
(12-57)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 5

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated March 3, 1958, License No. 29-209-2 is amended to add the following:

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
Nickel 63	Any	2 millicuries

9. Authorized use

Ni-63: Incorporation into organic compounds for physical properties studies.

For the U. S. Atomic Energy Commission

Date March 12, 1958

by Original Signed By James R. Mason 3/13/58

Division of Licensing and Regulation
Washington 25, D. C.

Form AEC-374a
(2-56)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 1

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated December 26, 1956, License No. 29-209-2 is hereby amended to add the following:

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
3 Carbon 14	Any	2 millicuries
4 Iron 55	Any	2.5 millicuries
5 Strontium 90	Any	100 millicuries
6 Chlorine 36	Any	50 microcuries

9. Authorized use

Laboratory experiments.

CONDITIONS

14. Byproduct materials shall not be used in or on human beings.

15. Byproduct materials shall not be used in products distributed to the public.

16. Byproduct materials shall not be used in field applications.

For the U. S. Atomic Energy Commission

Date January 11, 1957

by 1-11-57 BCA/[illegible]
Director, Isotopes Extension
Division of Civilian Application
Oak Ridge, Tennessee

Files L & S 1/11/57
DAS

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 2

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated April 22, 1957, License No. 29-209-2 is amended to add:

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
Sulfur 35	Any	5 millicuries

For the U. S. Atomic Energy Commission

Date April 29, 1957

by PCA/WB 4-29-57

Director, Isotopes Extension
Division of Civilian Application
Oak Ridge, Tennessee

WB/RLM

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 3

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated May 21, 1957, License No. 29-209-2 is hereby amended to add the following:

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
Iron 55	Any	10 millicuries

9. Authorized use

Fe 55: Laboratory experiments.

CONDITIONS

Condition 13 is amended to read as follows:

13. Except as hereinafter provided, the licensee shall comply with provisions of the Atomic Energy Commission's Standards for Protection Against Radiation (10-CFR-20) as published in the Federal Register January 29, 1957 and the amendment to said standards as published in the Federal Register May 14, 1957.

For the U. S. Atomic Energy Commission

Date May 28, 1957

by PCA/REB 5/29/57
Director, Isotopes Extension
Division of Civilian Application
Oak Ridge, Tennessee

BC | WTM

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

License Number 29-209-2

AMENDMENT NO. 4

American Cyanamid Company
Research Division
Bound Brook, New Jersey

Attn: Dr. William Seaman

In accordance with application dated August 5, 1957, License No. 29-209-2 is amended to add:

6. Byproduct material (element & mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
9 Any byproduct material between Atomic No. 3-83, inclusive	Irradiated Silica	5 millicuries

9. Authorized use

Study of flow reaction in a metal tube.

For the U. S. Atomic Energy Commission

Date September 20, 1957

by _____

Director, Isotopes Extension
Division of Civilian Application
Oak Ridge, Tennessee

Form AEC-374
(9-55)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose (s) and at the place (s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Name **American Cyanamid Company Research Division**	3. License number **29-209-2**
2. Address **Bound Brook, New Jersey**	4. Expiration date **April 30, 1958**
Attn: Dr. William Seaman	5. Reference No. **29-209-1**

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
Phosphorus 32	Any	5 millicuries
* Hydrogen 3	Any	1000 millicuries

9. Authorized use

P 32: To determine retention time and degree of mixing of liquid entering a continuous reactor.

H 3: Preparation of labeled compounds and study of reaction mechanisms.

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.; **and the materials are to be used by, or under the supervision of, the individual named above.**

11. THIS LICENSE SUPERSEDES LICENSE NUMBER 29-209-1 DATED APRIL 5, 1956.

12. Total amount of Hydrogen 3 (Tritium) procured under this license is not to exceed 1000 millicuries.

13. Except as hereinafter provided the licensee shall comply with provisions of the Atomic Energy Commission's proposed standards for protection against radiation as published in the Federal Register, July 16, 1955 (10-CFR-20), until such time as said proposed regulations or revisions thereof become effective regulations of the Commission. Notwithstanding, Section 20.24(f) of said standards, labeling shall not be required for laboratory containers such as beakers, flasks and test tubes, used transiently in laboratory procedures during presence of the user.

Amend No 5 3-12-58 to add Rc 63 Jas
Amend No 6 4-1-58 to add Avondale, La as a place of use JRB

Amend #1, 1/7/57 DRS
Amendment #2 4-24-57 RLH
Amendment #3 5-28-57 WBM
Amendment #4 9-20-57 MB

Date June 20, 1956

For the U. S. Atomic Energy Commission

by 6-20-56 ORIGINAL SIGNED BY LESTER R. ROGERS JRB

for: Director, Isotopes Extension
Division of Civilian Application
Oak Ridge, Tennessee

B.P./MB