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HW-11367

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PRODUCTION TEST 221-T-14

October 27, 1948

MAY 22 1956

USE OF AMMONIUM SILICO FLUORIDE CONTAINING INSOLUBLE
MATERIAL IN EXCESS OF THAT ALLOWABLE
UNDER HW SPECIFICATIONS

300 AREA
DECLASSIFIEDObjective:

To determine if a lot of ammonium silico fluoride containing insoluble material in excess of that allowable under HW specifications can be used in routine process operations.

Basis:

The specifications on the ammonium silico fluoride used in the first and second decontamination cycles are as follows:

NH_4SiF_6 98.0% min.
Insoluble Material 0.3% max.

Analyses made on individual samples taken from a 24,400 lbs. lot of this material, received during a shortage period from Davidson Chemical under order No. HW 27614, were as follows:

Sample No.	1	2	3	4	5	Av.
$\% \text{NH}_4\text{SiF}_6$	96.9	98.6	98.2	98.3	98.1	98.0
$\% \text{ Insol.}$	0.15	1.3	1.9	1.0	1.1	1.2

Five additional samples were taken and analyzed at the request of Davidson Chemical. Those results were as follows:

Sample No.	1	2	3	4	5	Av.
$\% \text{NH}_4\text{SiF}_6$	98.6	99.0	99.7	97.4	97.7	98.5
$\% \text{ Insol.}$	0.29	0.62	0.38	0.69	0.70	0.54

It has been proposed that this material be tested in production runs to determine if the material is to be returned to the vendor or accepted under a waiver of specifications.

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Procedure:

Five hundred pounds of the ammonium silico fluoride will be selected and analyzed to determine that the insoluble material is in excess of that specified. Sufficient 14% ammonium silico fluoride solution will be prepared in a clean tank to process one run through the first and second decontamination cycles. This solution will be clarified by settling over a period of 15 hours and the supernatant will be used for one run. The effect of this solution upon the clarity of the first and second cycle product solutions and the by-product losses will be observed. A second test of ten runs may be necessary to obtain conclusive results leading to acceptance or rejection of this material. If this material is accepted clarification by settling will be necessary during its use in routine production.

Data:

Routine analytical data will be collected by the "S" Division and analyzed by the Process Section of the 200 Area Technical Division.

Equipment:

A tank suitable for settling the prepared ammonium silico fluoride is available at F Plant.

Responsibility:

The responsibility for preparation of operating procedures will be assumed by M. J. Szulinski. Operations will be under the supervision of the "S" Division. The decision to accept or reject the silico fluoride will be made jointly by the "S" and Technical Divisions.

Estimated Completion:

Testing should be completed by November 30, 1948.

Approvals:

[Signature] "S" Division 11/1/48 Date
[Signature] Technical Division 11/1/48 Date
[Signature] Manager, Manufacturing Division 11-2-48 Date

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