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UNIVERSITY OF CALIFORNIA

February 23, 1944

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DEPARTMENT OF CHEMISTRY
BERKELEY 4, CALIFORNIA

Air Mail

BEST COPY AVAILABLE

Dr. F. S. Bacon
Arthur D. Little Co.
30 Memorial Drive
Cambridge 42, Mass.

Dear Dr. Bacon:

This letter is to inform you as to our present state of affairs, namely, the progress we have made in preparing the 50 lbs. of 3-fluorosalicylaldehyde.

Today we are doing our last diazotization. Since we allow it to dry for four days, it will be decomposed on Monday, February 28, and put all the way through to phenol by the end of that week, which will be Saturday, March 4.

Incidentally, these two steps of diazotization and decomposition, as well as other steps, have been greatly improved since Dr. Holst's departure for the east. When he was here the diazotization gave a highly colored product in 80% yield, requiring the services of three men for a whole day. Now the process has been improved to a point where we consistently get an almost white product in 94% yield, requiring two men for only about 6 hours. At that time the decomposition of the o-methoxy-diazonium fluoborate gave about 19-23 lbs. of fluoroanisole. Now we consistently get 28 lbs. and we have got as high as 34 lbs. The demethylation reaction has also been brought under control since we got the stirred Pfaudler glass-lined kettles. The yields are running 80% or better, while yesterday a 94% yield was obtained. However, the Kolbe reaction and the subsequent reduction have as yet undergone no startling changes.

We now have 100 lbs. of pure phenol on hand and the prospects of 80 more by March 4, since we have enough anisole for 10 demethylations which we do at the rate of one per day, each yielding 8 lbs. pure material.

To date we have produced 28 lbs. of the aldehyde, of which 5 lbs. was sent to Dr. Holst at Rumford Chemical Co. We have 20 lbs. of 3-fluorosalicyllic acid ready to be reduced, which will yield another ten pounds of aldehyde, making a total of 33 lbs. which we will have by March 1. Our large autoclave takes a charge of 25 lbs. of phenol out of which we get 14 lbs. of o-fluoroacid or 7 lbs. of the aldehyde. We are doing two of these Kolbe reactions each week which means that by March 4 we should have enough acid on hand to produce the balance of the 50 lbs. of aldehyde. We are doing the reduction every other day, producing 3 lbs. of aldehyde from the 6 lbs. of acid we reduce. Therefore, if all goes well, that is, if all continues to go as it has been going, we will have 50 lbs. of 3-fluorosalicylaldehyde on hand by March 15.

Sincerely,

Richard H. Bailes

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BY AUTH. G. D. R. 1 43-1
BY *[Signature]* DATE 3/13/96
BY *[Signature]* DATE 3/13/96

cc: Stevenson, Geissman
Rushton, Prentiss