Translation Book #165
Reel 15
~~Bag 3043, Item 3, page 8-11~~

1632 July 7, 1948

S-1

SINCLAIR REFINING COMPANY

Spherical Chromium-Alumina Catalyst

(a) Dehydrogenation of n-butane

The following values have been obtained in long-time experiments with n-butane, using a spherical catalyst prepared from a chromium-alumina paste.

Charge 1:800 Total time in operation (without regeneration) 820 hrs.

In operation for 80 separate periods, averaging 9 1/2 hrs.
Initial values: 40% conversion rate with 90% output in the course of 7 1/2 hrs.
Terminal values: 35% " " " 80%

At the end, part of the catalyst was broken into pieces.

[illegible]

Its motion is conspicuously more even, even though not yet quite smooth. The thermocouple case, mounted in the axis of the pipe, may have a disturbing effect. The conversion rates obtained with the spherical catalyst are as high as those given by catalyst lumps. Since wear and tear was excessive on using a screw conveyor we may install a conveyor like in Leuna. When the catalyst enters the conveyor or the drum it will frequently get stuck.

The comparison of the results obtained at Leuna and Oppau shows clearly that the Oppau catalyst is by far superior to the "old" Leuna catalyst and about equal to the "new" Leuna catalyst with respect to conversion rate and output. But it is not yet possible to manufacture the new Leuna catalyst in major charges, whereas the large-scale manufacture of the Oppau catalyst offers no difficulty.