

SINCLAIR REFINING COMPANY

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Tungsten requirements for benzination catalyst

Meeting at Berlin, July 21, 1943

A) Types of Catalyst

1) Catalyst 5058 (high-tungsten content high-performance catalyst)

Bulk weight = 2.5; W content = 100% WS_2 = 80% W, at present in operation 840 tons containing 670 tons of W; life = 1 year.

Current wear = 15% in regeneration. If it is recovered via Fe the maximum loss in W is 10%.

When it is advisable to use a catalyst of so high a W-content depends upon the nature of the petroleum products to be produced and the peculiar features of the production methods in operation at the individual plants. At the present time the Zeitz plant is the principal buyer of this catalyst. It is not possible for this plant to switch to a W-rarefied catalyst in the near future.

2) Catalyst 8376 (W-diluted high-performance catalyst on alumina basis).

Bulk weight = 1.0; W-content = 20-25% (it is not possible to state the W-content more exactly) at present undergoing tests in large-scale operation.

Estimated life: 1 year; current wear and tear in regeneration: 15% (estimated).

Use: substitute catalyst for 5058. Tests were hitherto favorable. Final judgement will only be possible at the end of 1943.

3) Catalyst 6434* (W-rarefied gas-phase catalyst).

Bulk weight = 1.0

Life = about 1 year

Current wear and tear = 100%, since the spent catalyst cannot be regenerated. W can only be recovered by working it up to WO_3 (W-recovery = 50%) or to ferrotungsten (W-recovery about 90%).

B) (Discussion of the amount of W needed for catalyst reserves.)

D) (Probably K8376 will everywhere be substituted for K5058 as early as 1945, if the test will turn out entirely satisfactory).

E) (How to save W in preparing WO_3 and during regeneration? No operational details given).

* Terrana; 10% WS_2 . 8% HF (M.B.). These data, given somewhere else, provide for a higher WS_2 content than the above given.

ME/BH

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