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CENTRAL

INFORMATION REPORT

CD NO. 25X1

COUNTRY	East Germany	DATE DISTR.	20 June 1955
SUBJECT	VEB Synthesewerk Schwarzheide: Development of Iron Contacts for Hydrocarbon Synthesis	NO. OF PAGES	2
PLACE ACQUIRED		NO. OF ENCLS. (LISTED BELOW)	25X1
DATE OF INFO.		SUPPLEMENT TO REPORT NO.	

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THIS IS UNEVALUATED INFORMATION

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1. Among the 1954 projects carried out by the Research and Development Department of VEB Synthesewerk Schwarzheide, was a project on "Experiments for the Further Development of Iron Contacts for Hydrocarbon Synthesis according to Fischer-Tropsch". Its short designation was "Catalyst Research". Its plan number was 013509b(F-4/01). It was under the supervision of Dipl. Chem. Vinke (fnu).

2. The following information on the project was given in the 1954 research and development report of the Schwarzheide enterprise:

   a. The investigation of the contacts was started with experiments aiming at determining the core hardness (Kernhaerte), the frame volume (Geruestvolumen), pore volume, the intermediary volume (Zwischenraumvolumen), and the porosity. These experiments and the values obtained did not show any reasonable relationship to the contact performance, the activity and the selectivity, and were therefore abandoned.

   b. Subsequently, a BET ap[redacted]t for determining the absolute surface through nitroge[redacted]otherms. Initial technical difficulties were over[redacted]ments can now be carried out with an error of plus or minus 3 to 5%. The apparatus is provided with safety installations for permitting evacuation even during [redacted]. All contacts were degassed for a period of 24 hours at 200° C. in a vacuum up to 10^{-4} mm. Hg. It was found through preliminary experiments that this time is sufficient and that the contacts are not damaged by the temperature mentioned. An apparatus for the purification of the nitrogen made it possible to use 99.95% nitrogen for [redacted] purposes.

   c. The apparent and the true density were determined according to the principle of high-pressure pyknometry, with the aid of Xylol and, for comparison purposes, with toluol and mercury. An apparatus for this purpose was built; it permitted measurements with an error of plus or minus 0.5%.

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CLASSIFICATION S-E-C-R-[redacted]

STATE	X	NAVY	X	NSRB			
ARMY	X	AIR	X	FBI			

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d. A series of experiments was carried out with an M10 contact with [redacted] as a carrier and with an M10 contact without carrier. The [redacted] of contacts were always obtained under the same conditions but at different temperatures: of 150°, 200°, 250°, 300°, [redacted]° C. It was found that with increasing reduction [redacted] the surface of 161.9 square meters per gram contact (Gruenkorn M/K 19) decreased to 73.6 square meters per gram contact at 450° C. The decrease was even more significant with contact M10 without carrier: Gruenkorn 202.3 square meters per gram contact decreased to 15.2 square meters per gram contact at 400° C.

e. A number of X-ray pictures was taken of contacts. The evaluation of these pictures showed that Fe_3O_4 is generated at low temperatures; that Fe_3O_4 and metallic iron are generated at medium temperatures; and furthermore that metallic iron only is generated during the reduction at higher temperatures.

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d. A series of experiments was carried out with an MnO contact with kieselguhr as a carrier and with an MnO contact without carrier. The same amounts of contacts were always obtained under the same conditions but at different temperatures of 150°, 200°, 250°, 300°, 350°, 400°, and 450° C. It was found that with increasing reduction of temperature the surface of 161.5 square meters per gram contact (Gruenkorn B/K 19) decreased to 73.6 square meters per gram contact at 450° C. The decrease was even more significant with contact MnO without carrier: Gruenkorn 202.3 square meters per gram contact decreased to 15.2 square meters per gram contact at 400° C.

e. A number of X-ray pictures was taken of contacts. The evaluation of these pictures showed that Fe_3O_4 is generated at low temperatures; that Fe_3O_4 and metallic iron are generated at medium temperatures; and furthermore that metallic iron only is generated during the reduction at higher temperatures.

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