

SINCLAIR REFINING COMPANY

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Utilization of the waste gases of a roasting furnace for a kieselgur purification

Sample: A raw-gur (ribbon-gur) from the "Else" mine stored in heaps since July 1938.

Acid Solubility: 4.75% Fe
0.08% Al
0.05% Ca
Traces SO₄

Execution of the test. We are used to observing, on roasting a raw gur, that the waste gases contain considerable quantities of SO₂ and sometimes also some SO₃. For this reason we tried to tap the waste gases before they entered the chimney and to pass them through a raw gur with water.

A raw gur emulsion with water has a p_{H^+} value of approximately 4.8; after the gases have passed through for about 5 hours, this value drops to 2.0. That shows that an acid has been formed and that none of the soluble constituents of the raw-gur are being diluted any more. After being treated in such a way, the raw gur was filtered in a suction filter, washed, dried, and then ignited at 1000°C., for one hour. After this treatment the gur had an acid solubility as follows:

1.03% Fe
0.04% Al
0.02% Ca
0.00% SO₄

That means that the gas wash has dissolved approximately 78% Fe out of the gur.

Munster, May 13, 1939

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