TRANSLATION

Versuchsgrubengesellschaft mbH Dortmund

Dortmund, Germany
January 29, 1964

Our Ref. vD/L

Test Report

on combustion experiments on hydraulic fluid

"Pydraul A-200"

Determination of flame propagation in a mixture of coal dust and fluid.

A sample of the hydraulic fluid, trade marked "Pydraul A 200" was submitted by Firma W. Köhnk, Hamburg, to the test mine.

The technological properties of this fluid were established by Technischen Uberwachungsverein Essen e.V., by a chemical-physical analysis.

The tests were conducted on September 23, 1963, in accordance with the "Second Report of the European Association for Coal and Steel of March 8, 1963", pages 15 and 29 - 31.

Burning time min.	Flame propagation mm
1	41
2	45
3	42
4	42
4.1	flame extinguished

The farthest distance reached by the flame tip was 45 mm.

Therewith, the requirements set forth in the above mentioned "Second Report" (page 15) pertaining the flame propagation, were fulfilled.

Versuchsgrubengesellschaft mbH Test conducted by:

CB

DSW 586307

TRANSLATION

Versuchsgrubengesellschaft mbH Dortmund

46 Dortmund, Germany
January 29, 1964

Our Ref. G/Rt

Test Report

on combustion experiments made on Hydraulic Fluid

"Pydraul A-200"

Spraying test on a flame

A sample of the hydraulic fluid trade marked "Pydraul A-200" was submitted to the test mine by Firma W. Köhnk, Hamburg.

This hydraulic fluid is essentially a chlorinated phosphate ester. The technological properties of the fluid were established by Technischen Uberwachungsverein Essen e.V. through chemical-physical analyses.

The report was conducted on September 27, 1963, in accordance with the "Second Report of the European Association for Coal and Steel, of March 8, 1963". Illustration 1 shows the test equipment.

The fluid to be tested, which had a temperature of 65 + 5°C, was compressed by means of nitrogen, with a pressure of 70 + 3 kp/cm^2, through a nozzle with a bore diameter of 0.4 mm. The spray jet thus produced was directed on a metal screen at a distance of 1.75 m. In the spray stream, there was a flame from an oxyethylene torch (tip of the torch 750 l/h) whose inner white, blue rimmed cone was 10 cm long, horizontal, was directed at right angles to the spray jet, so that the nozzle moved along from the nozzle to a distance of 120 cm from the latter to the shaft of the spray cone, at the rate of 4 cm/s. The flame remained for 5 s at the point of the greatest distance from the nozzle.

Illustrations 2, 3 and 4 show the effects of the hydraulic fluid on the flame at distances of 0.4 m, 0.8 m and 1.2 m.

The spray jet ignited, without the flame reaching the screen.

Therewith, the requirements set forth in the above mentioned "Second Report" (page 27) were fulfilled.

Dortmund, January 29, 1964.

Versuchgrubengesellschaft mbH Test conducted by:

DSW 586308

CB

TRANSLATION

Versuchsbrubengesellschaft mbH - Dortmund

46 Dortmund, Germany
January 29, 1964

Our Ref. G/Rt

Test Report

on combustion experiments on the Hydraulic Fluid

"Pydraul 625"

Determination of the flame propagation of a mixture of coal dust and fluid.

A sample of the Hydraulic Fluid with the trade mark of "Pydraul 625" was delivered to the experimental mine by the Firma W. Köhnk, Hamburg.

The technological properties of this fluid were determined by the Technischen Überwachungsverein Essen e.V. in a chemical and physical analysis.

The experiments were conducted on December 6, 1963, according to the "SecondReport of the European Association for Coal and Steel of March 8, 1963", pages 15 and 29 - 31.

Burning time Min.	Flame propagation mm.
1	40
2	50
3	50
4	flame extinguished

The farthest distance reached by the flame tip was 50 mm.

Therewith, the requirements set forth in the above mentioned "Second Report" (Page 15) pertaining to flame propagation, were fulfilled.

Dortmund, January 29, 1964

Versuchsgrubengesellschaft mbH Test conducted by:

CB

DSW 586309

TRANSLATION

Versuchsgrubengesellschaft mbH Dortmund

66 Dortmund, Germany
January 29, 1964

Our Ref. G/Z

Test Report

On combustion experiments on the Hydraulic Fluid

"Pydraul 625" - Spraying test on a flame.

A sample of Hydraulic Fluid was submitted to the test mine by Firma W. Köhnk, Hamburg.

This hydraulic fluid is essentially a chlorinated phosphate ester. The technological properties of the fluid were determined by means of a chemical-physical analyses, made by Technischen Überwachungsverein Essen e.V.

The test was conducted on November 23, 1963, according to the "Second Report of the European Association for Coal and Steel of March 8, 1963". The test equipment is shown in illustration 1. The fluid to be tested, which had a temperature of 65 $\pm$ 5°C, was compressed by means of nitrogen with a pressure of 70 $\pm$ 3 kp/cm^2 through a nozzle with a bore diameter of 0.4 mm. The spray jet thus produced was directed on a metal screen placed at a distance of 1.75 m from the nozzle. In the spray jet there was the flame from an oxyacetylene-torch (mouthpiece 750 l/h) whose inner white, blue bordered blowing pin was 10 cm long, horizontal, was guided at right angles to the spray jet in such manner, that the cone tip moved along from the nozzle to a distance of 120 cm from it on the shaft of the spray cone, at the rate of 4 cm/s. The flame remained 5 s on the point of the greatest distance from the nozzle.

Illustrations 2, 3 and 4 show the effect of the hydraulic fluid on the flame at distances of 0.4 m, 0.8 m and 1.2 m.

The spray jet ignited, without the flame reaching the screen.

Therewith, the requirements set forth in the above mentioned "Second Report" (page 27) were fulfilled.

Versuchsgrubengesellschaft mbH Test conducted by:

CB

DSW 586310