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A METHOD FOR TREATING THE ABSORPTION OIL,(U)
JUN 78 Y I GROMOV, I S SIDORENKO
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FOREIGN TECHNOLOGY DIVISION

A METHOD FOR TREATING THE ABSORPTION OIL

by

Ye.I. Gromov, I.S. Sidorenko, et al

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U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	*А а*	A, a	Р р	*Р р*	R, r
Б б	*Б б*	B, b	С с	*С с*	S, s
В в	*В в*	V, v	Т т	*Т т*	T, t
Г г	*Г г*	G, g	У у	*У у*	U, u
Д д	*Д д*	D, d	Ф ф	*Ф ф*	F, f
Е е	*Е е*	Ye, ye; E, e*	Х х	*Х х*	Kh, kh
Ж ж	*Ж ж*	Zh, zh	Ц ц	*Ц ц*	Ts, ts
З з	*З з*	Z, z	Ч ч	*Ч ч*	Ch, ch
И и	*И и*	I, i	Ш ш	*Ш ш*	Sh, sh
Й й	*Й й*	Y, y	Щ щ	*Щ щ*	Shch, shch
К к	*К к*	K, k	Ъ ъ	*Ъ ъ*	"
Л л	*Л л*	L, l	Ы ы	*Ы ы*	Y, y
М м	*М м*	M, m	Ь ь	*Ь ь*	'
Н н	*Н н*	N, n	Э э	*Э э*	E, e
О о	*О о*	O, o	Ю ю	*Ю ю*	Yu, yu
П п	*П п*	P, p	Я я	*Я я*	Ya, ya

*ye initially, after vowels, and after ъ, ь; e elsewhere.
When written as ё in Russian, transliterate as yё or ё.

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	$\sinh^{-1}$
cos	cos	ch	cosh	arc ch	$\cosh^{-1}$
tg	tan	th	tanh	arc th	$\tanh^{-1}$
ctg	cot	cth	coth	arc cth	$\coth^{-1}$
sec	sec	sch	sech	arc sch	sech^{-1}
cosec	csc	csch	csch	arc csch	csch^{-1}

Russian	English
rot	curl
lg	log

A METHOD FOR TREATING THE ABSORPTION OIL

Ye. I. Gromov, I. S. Sidorenko,
V. N. Il'yashenko, P. G. Gus'kov,
and B. I. Melikentsov.

The invention relates to the technique of purification of the absorption oil, used to remove the benzene hydrocarbons from the coke oven gas, from the impurities which cause corrosion in the equipment of the benzene department of the by-product coke industry.

There is a known method which uses a 25% solution of sulfuric acid for purifying the absorption oil from the organic (quinoline) bases, which, upon coming in contact with the hydrogen sulfide, hydrocyanic acid, and ammonium chloride contained in the coke oven gas, form the corrosion-active salts of organic bases. The acid solution of organic bases obtained in this case is subjected to further neutralization by the ammonia water.

The shortcoming of this method is in the fact that it requires the use of a corrosive 25% solution of sulfuric acid, which complicates the process due to the fact that the toxic acid solution of the bases cannot be discarded into the sewage.

For the purposes of simplification of the purification method for the absorbing oil and to prevent active corrosion of the equipment in the benzene department, it is proposed that the oil be treated with a mixture of the phlegm and separation water in the following composition:

	Phlegm water	Separation water
NH_3 volatile	0.06–0.09	0.09–0.12
NH_3 bonded	0.03–0.11	0.11–0.33
H_2S	0.06–0.09	0.38–0.6
CN^1	0.03–0.54	0.04–1.56
CNS^1	0.03–0.05	0.06–0.1
Cl^1	0.01–0.09	0.01–0.15
pH	7	7.2–7.8

The essence of the method consists of the fact that a portion of the absorbing oil (approximately 0.5–1.5 vol. %) in circulation from which benzene was removed is subjected to washing with a mixture of the phlegm and separation waters of the indicated composition. The ratio of oil and the wash water mixture is 1:4–1:2.

Corrosive thiocyanate, chlorine, and sulfurous compounds, formed out of the organic bases and the acidic admixtures of the coke oven gas, are eliminated during the washing process and a subsequent settling of the absorption oil. After it has been washed and separated from the water the oil is returned to circulation, while the water is mixed with the excess water used for final cooling of the coke oven gas and is directed to the area of purification.

An example. Oil in circulation is subjected to treatment at 3000–6000 *l/h*. As a result, during the 7 months of operation of the washer, the thiocyanate content in the absorption oil is decreased from 1030–1180 to 240 *mg/l*; the pH of the water extraction changes from 5 to 6.2; and the oil corrosion rate decreases from 15 down to 1 mm/g.

Object of the invention

The treatment method for the absorption oil, used to remove the benzene hydrocarbons from the coke oven gas by washing, is *distinguished* by the fact that, in order to simplify the process, the oil is washed with a mixture of the phlegm and separation waters.

Ukrainian Scientific Research
Institute on Coal Chemistry

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