

622.24.051.64

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 ... , ... , ...
 : +38 (067) 446-36-48; -mail: oleynik_nonna@ukr.net

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20/14, 10/7, 1/0

-50, -75, -95, -99, -50 -75,

;

1,0 %.

:

,

.

[1].

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...

-50, -75, -95, -99, -99

sp²- 1% sp³- [2]. ,

sp²- -50; -75 -95 —

50 %, 25 % 5 %.

-50, -75, -

95, -99, . 1.

1.	-50,	-75,	-95,	-99
	-50	-75	-95	-99
(sp ³) %, ,	50	75	95	99
, %, ,	1,8	1,0	1,8	0,5
Fe, Ti, Mn, Cu, Cr, %, ,	0,8	0,5	0,8	0,3
, ^{3/} ,	–	–	20,0·10 ⁻⁸	1,0·10 ⁻⁸
, ^{2/} ,	200–300	200–300	120–250	140–300
, / ³ ,	2,7	3,0	3,3	3,4
, %, ,	3,0	2,0	3,0	1,0

- -

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10

10
6,

1

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20/14, 10,7 1/0

-50, -75, -95, -99 [3].

$\varpi = 470^{-1}$ 3 .

.

,

-3

AutoPycnometer 1320

5 [4].

[5].

.

-

20/14, 10/7 1/0

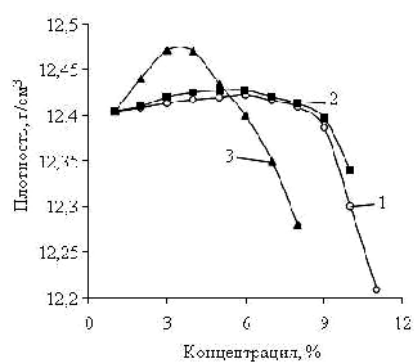
1,0 %

10,0 %

.

,

.



. 1.

. 1.

. 1

(12,40 / ³).

12,47 / ³,
20/14
12,42 / ³.

: 20/14 - 1, 10/7 - 2,
1/0 - 3

5,5 % (. 1, 1).

10/7
12,43 / ³

4,0 % (. 1, 2).

12,47 / ³ 3,0 %

1/0

(. 1, 3).

,

,

(1,0 %), ,

sp²-
-50, -75, -95, -99
6 1 % ().

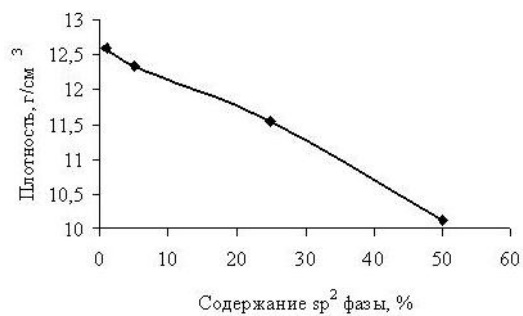
. 2.

2. -

/		/ ³ ,	,
1	-50	10,123	2,397
2	-75	11,546	2,734
3	-95	12,344	4,004
4	-99	12,601	4,087
5		12,404	2,937

. 2

-
.
,
-95 -99 ,
-50 -75 -
. sp^2 -



. 2.

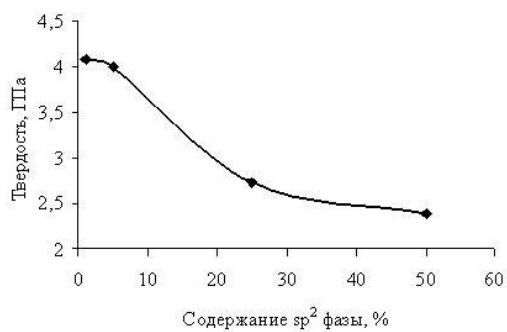
1000

sp^2

sp^3

sp^2

sp^2



. 3.

. 3

sp^2

. 3

sp^2

,

()

:

1.

1,0 %.

20/14, 10/7

1/0

,

2.

-95

-99

, -50 -75 -
(-50 -75)

1. / . . ,
2007. – 244 .

2. //
- 2008. - 2. - 3 – 12.

3. -
/ . . //

2007. – 234 .

4. ; 2- . / . .
1996. – 652 .

5. // . – 1988. -
2. – 35-37.

30.01.2012.

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. . . , . . , . .

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20/14, 10/7 1/0
-75, -95, -99.

-75

1,0%,
-50

-

2.

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**G.P. Bogatyreva, G.D. Ilitskaya,
A.M. Isonkin, N.A. Oliynyk, G.A. Bazaliy**
**EFFECT OF DISPERSION ADDITIVES
POWDERS OF DIAMOND ON PHYSICAL
AND MECHANICAL PROPERTIES OF
COMPOSITE MATERIAL FOR MATRIX
FOR DRILLING TOOL**

Research results of the influence of additions of diamond micro- and nanopowders on the physics and mechanical characteristics of composite matrix for drilling tool are presented in the article. The material obtained by sintering the matrix wolfram-cobalt mix impregnated with copper and supplements - micron diamond grit size 20/14, 10/7 and 1/0 and powders marks ASUD-50, ASUD-75, ASUD-95 ASUD-99. It is established that the addition of diamond micron powders increases the density of samples less than 1.0%. Addition of nanopowders ASUD-50 and ASUD-75, reduces the density and hardness of the metal matrix samples of drilling tools of the high content of nanopowders carbon.

Keywords: metal matrix drilling tools, composite material, density, hardness, micro- and nanopowders diamond.