

622.24.051.64

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-50, -75, -95, -99, 20/14, 10/7, 1/0

-50 -75,

; 1,0 %.

[1].

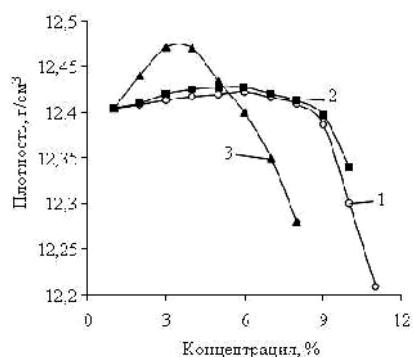
-50, -75, -95, -99, [2]. -99
 sp²- sp³- [2]. -99
 1% sp²- -50; -75 -95 —
 sp²- 50 %, 25 % 5 %. -50, -75,
 95, -99, . 1.

	1. -95, -99	-50	-75	-95	-75, -75,
(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

$$10 \quad . \\ 6, \quad \quad \quad : \quad \quad \quad 1 \quad . \quad \quad \quad 20/14, \quad 10,7 \quad 1/0 \\ -50, \quad \quad \quad -75, \quad \quad \quad -95, \quad \quad \quad -99 [3].$$

[5]. Autoradiometer 1520

10,0 % . 20/14, 10/7 1/0 1,0 %



. 1.
 $12,47 / \text{cm}^3$,
 $20/14$
 $12,42 / \text{cm}^3$.

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

$5,5\%$ (. 1,
 $10/7$
 $12,43 / \text{cm}^3$
 $4,0\%$ (. 1,
 2).
 $12,47 / \text{cm}^3$
 $3,0\%$
 $(. 1,$
 $3)$.

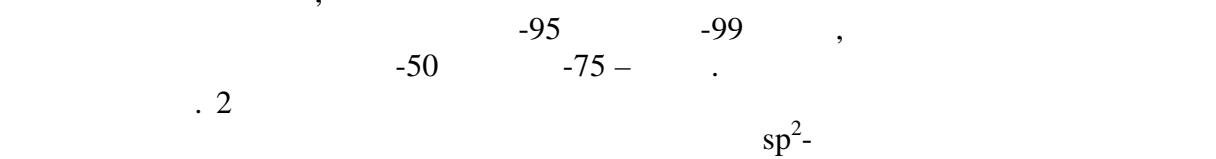
,
 $1,0\%$), ,
 sp^2-
 $-50, -75, -95, -99$
 6
 1% ().

. 2.

2.

/		$/ \text{cm}^3$,	,
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

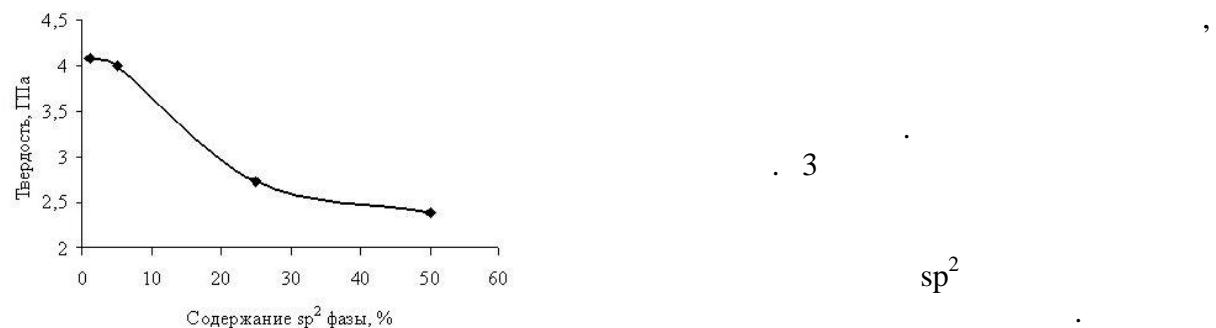
2



2 sp^2



sp^2 sp^2



sp^2

1. () 20/14, 10/7 1/0
1,0 %. ,

2. -95 -99 ,

-50 -
(-50 -75)

:

1. , . . . - : - , 2007. - 244 / . . .

2. . . / . . , . . //
- 2008. - 2. - 3 - 12.

3. . . / . . //
: : , - . - .

2007. - 234 .

4. . . : ; 2- . . / . .
- . - . : . , 1996. - 652 .

5. . . / . . // . - 1988. -
2. - . 35-37.

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A.M. Isonkin, N.A. Oliinyk, G.A. Bazaliy*

**EFFECT OF DISPERSION ADDITIVES
POWDERS OF DIAMOND ON PHYSICAL
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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.

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