

The method of making bismuth metal crystals big and beautiful

ビスマス金属結晶を大きく綺麗に作るには

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How to obtain bismuth metal crystals

Solid bismuth are heated in the stainless pot to melt into liquid bismuth and metal crystals are picked from melting bismuth in the pot.

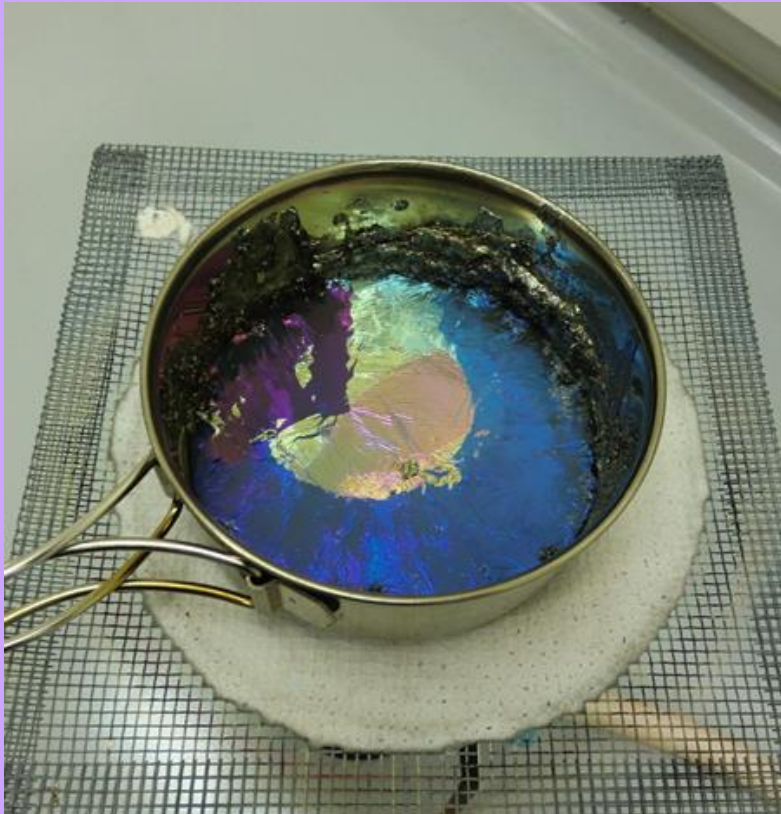


How to measure length of bismuth metal crystals

The horizontal length of the picked crystal is measured with a ruler.

Modification in the cooling methods

A. control



A	1	2	3	4	5
1 min	nothing	nothing	nothing	nothing	nothing
2 min	nothing	a piece of crystal (7mm)	a crystal (32mm)	a piece of crystal (10mm)	nothing
3 min	a piece of crystal (7mm)	a piece of crystal (8mm)	a crystal (20mm)	a piece of crystal (15mm)	a piece of crystal (4mm)
4 min	a piece of crystal (12mm)	a piece of crystal (13mm)	a crystal (25mm)	a piece of flat crystal (15mm)	a slender crystal (20mm)
6 min	a flat crystal (30mm)	a flat crystal (30mm)	a flat crystal (30mm)	a flat crystal (40mm)	a flat crystal (30mm)

B. cool in ice



B	1	2	3	4	5
1 min	nothing	nothing	nothing	nothing	nothing
2 min	nothing	hardened	hardened	a piece of crystal (5mm)	a piece of crystal (10mm)
3 min	hardened			a piece of flat crystal (10mm)	hardened
4 min				hardened	

C. cool in earthen pot



C	1	2	3	4	5
1 min	nothing	a crystal (30mm)	nothing	a crystal (20mm)	nothing
2 min	a piece of crystal (5mm)	a piece of crystal (10mm)	a piece of crystal (5mm)	a piece of crystal (5mm)	a piece of crystal (10mm)
3 min	a crystal (20mm)	a flat crystal (50mm)	a flat crystal (35mm)	a flat crystal (30mm)	a crystal (30mm)
4 min	a flat crystal (80mm)	a flat crystal (30mm)	a flat crystal (20mm)	a flat crystal (30mm)	a flat crystal (20mm)
6 min	hardened	hardened	hardened	hardened	a crystal (25mm)

D. cool in heated earthen pot



D	1	2	3
1 min	nothing	nothing	nothing
2 min	nothing	nothing	nothing
3 min	nothing	nothing	nothing
4 min	nothing	nothing	nothing
5 min	a piece of crystal (10mm)	nothing	nothing
6 min	a crystal (25mm)	nothing	a piece of crystal (10mm)
7 min	a crystal (30mm)	a crystal (20mm)	a crystal (20mm)
8 min	a crystal (50mm)	a piece of crystal (15mm)	a crystal (30mm)
9 min	a crystal (40mm)	a piece of crystal (10mm)	a crystal (35mm)
10 min	a crystal (25mm)	a crystal (40mm)	a crystal (50mm)
11 min	a piece of crystal (5mm)	a piece of crystal (10mm)	a crystal (30mm)
12 min	a piece of crystal (5mm)	a piece of crystal (10mm) x 2	a crystal (35mm)
13 min	a piece of crystal (5mm)	a piece of crystal (10mm) a crystal (20mm)	a crystal (40mm)
14 min	hardened	a crystal (25mm)	a piece of crystal (10mm)
15 min		a piece of crystal (10mm)	a piece of crystal (7mm)
16 min		a crystal (20mm)	a piece of crystal (10mm)
17 min		hardened	a piece of crystal (10mm)
18 min			hardened

Difference in time for whole bismuth to become solid

analysis1	time for whole bismuth to become solid
A	about 7 - 8 min (no record)
B	about 2 - 4 min (2 min : 2 cases 3 min : 2 cases 4 min : 1 case)
C	about 6 - 7 min (6 min : 4 cases 7 min : 1 case)
D	about 14 - 18 min (14 min : 1 case 17 min : 1 case 18 min : 1 case)

Difference in form of the crystal

analysis 2

crystal obtained by cooling in the heated earthen pot (D)

crystal obtained by cooling in the air (A)