

**substance: boron compounds with actinides**  
**property: properties of boron-uranium compounds**

## **UB<sub>2</sub>**

Preparation [75S, 77P, 75M], crystalline structure [75S, 77C], magnetic properties [77B2]

Space group: P6/mmm

### **lattice parameters** (in nm)

<i>a</i>	0.31293...0.31314	<i>T</i> = 300 K	92P,
<i>c</i>	0.39853...0.39857		91K

Compression study by synchrotron X-ray diffraction in [92D].

### **entropy**

<i>S</i>	55.13(13) J mol <sup>-1</sup> K <sup>-1</sup>	86B
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## **UT<sub>3</sub>B<sub>2</sub> (T=Co, Ru, Ir)**

Intermediate valence behaviour compared with CeT<sub>3</sub>B<sub>2</sub> in [84Y].

## **UB<sub>4</sub>**

Preparation [75S, 77P, 75M, 75B], crystalline structure [75S], magnetic properties [77B2, 75F]

Space group: P4/mbm

### **lattice parameters**

<i>a</i>	7.0568 nm	<i>T</i> = 300 K	96G
<i>c</i>	3.9659 nm		

For unit cell parameters see also [92P, 91K, 91S].

Compression study by synchrotron X-ray diffraction in [92D].

### **entropy**

<i>S</i>	75.29(837) J mol <sup>-1</sup> K <sup>-1</sup>	86B
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### **melting point**

<i>T<sub>m</sub></i>	2495 °C	96G
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### **microhardness**

(in kg mm<sup>-2</sup>)

<i>H<sub>K</sub></i> (prism)	2500...2720	<i>T</i> = 300 K	load 20 g	96G
<i>H<sub>K</sub></i> (prism)	2380...2680	<i>T</i> = 300 K	load 50 g	
<i>H<sub>K</sub></i> (dipyramid)	1500...2130	<i>T</i> = 300 K	load 50 g	
<i>H<sub>K</sub></i> (pinacoid)	2140...2170	<i>T</i> = 300 K	load 50 g	
(ranges of anisotropy)				

## **URuB<sub>4</sub>, UOsB<sub>4</sub>**

Preparation and structure in [83R].

## **U<sub>1-x</sub>Th<sub>x</sub>B<sub>4</sub>**

Magnetic properties in [82C].

## **U<sub>2</sub>MoB<sub>6</sub>, U<sub>2</sub>ReB<sub>6</sub>, U<sub>2</sub>OsB<sub>6</sub>**

Preparation and structure in [83R].

## **UB<sub>12</sub>**

Semicond.?; preparation [75S, 75M], crystalline structure [75S, 77M], magnetic properties [77B2, 73O]

Space group:  $Fm\bar{3}m$

**lattice parameters**

$a$	$0.7470...0.7474 \text{ nm}$	$T = 300 \text{ K}$	92P, 91K
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Compression study by synchrotron X-ray diffraction [92D].

**entropy**

$S$	$112.94(125) \text{ J mol}^{-1}\text{K}^{-1}$	86B
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**UBN ternary system**

For phase diagram, preparation and structure see [91K].

**Other ternary B-U compounds**

New ternary transition metal borides containing uranium and rare earth elements in [83R].

## References:

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