



>>Entry Name: Uranium(IV,VI) oxide (U₃O₈)

Synonym(s): Pitchblende

CAS Registry Number: 1344-59-8

U₃O₈

Molecular Formula: O₈U₃

Molecular Weight: 842.082

Accurate Mass: 842.111672

Percentage Composition: O 15.20%; U 84.80%

Source/Synthesis: Formed when all U oxides dec. in air above 650°; mineral- important uranium ore

Use/Importance: Common weighing form in gravimetric detn. of U

Solubility: Insol. H₂O; sol. HNO₃, H₂SO₄

Other Data: Loses O₂ above 800°, replaced rapidly on cooling in air

>>Variant: α-form

Molecular Formula: O₈U₃

Molecular Weight: 842.082

Accurate Mass: 842.111672

Percentage Composition: O 15.20%; U 84.80%

Physical Description: Black-green orthorhombic cryst.

Melting Point: Mp 1150°

>>Variant: β-form

Synonym(s): High-temp.-form

Molecular Formula: O₈U₃

Molecular Weight: 842.082

Accurate Mass: 842.111672

Percentage Composition: O 15.20%; U 84.80%

Source/Synthesis: Obt. by extended heating of α-form at >1000°, followed by slow cooling

Physical Description: Green-black orthorhombic cryst.

References:

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Herak, R., *Acta Cryst. B*, 1969, **25**, 2505, (*cryst struct*, β-form)

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