



>>Entry Name: Molybdenum selenides

CAS Registry Number: 54183-54-9

Related CAS Registry Numbers(s): 12286-14-5 95326-81-1 104443-21-2 111777-54-9

Molecular Formula: [MoSe]

>>Variant: Molybdenum selenide (Mo₃Se₄)

CAS Registry Number: 12058-30-9

Molecular Formula: Mo₃Se₄

Molecular Weight: 603.66

Accurate Mass: 613.382298

Percentage Composition: Mo 47.68%; Se 52.32%

pyramid. Mo-Mo bonding occurs, resulting in formation of Mo₆ clusters

Source/Synthesis: Synth. directly from stoichiometric amounts of the elements at *ca.* 1100°

Use/Importance: Used in preparation of ternary selenides M_xMo₃Se₄ (M = e.g. Ni, Pb; 0 ≤ *x* ≤ 1). Several of these compds. are superconductors e.g. Pb_{0.5}Mo₃S₄ (PbMo₆S₈) with *T_c* 15K

Physical Description: Dark lead grey cryst.

Solubility: Insol. H₂O

>>Variant: Molybdenum selenide (Mo₆Se₈)

CAS Registry Number: 57620-26-5

Molecular Formula: Mo₆Se₈

Molecular Weight: 1207.32

Accurate Mass: 1226.764596

Percentage Composition: Mo 47.68%; Se 52.32%

>>Variant: Molybdenum selenide (Mo₂Se₃)

CAS Registry Number: 12325-96-1

Molecular Formula: Mo₂Se₃

Molecular Weight: 428.76

Accurate Mass: 435.560372

Percentage Composition: Mo 44.75%; Se 55.25%

>>Variant: Molybdenum selenide (MoSe₂)

CAS Registry Number: 12058-18-3

Molecular Formula: MoSe₂

Molecular Weight: 253.86

Accurate Mass: 257.738446

Percentage Composition: Mo 37.79%; Se 62.21%

Source/Synthesis: Synth. from MoO₃ + Se

Use/Importance: Lubricant, battery material

Physical Description: Bluish black leaflets

Solubility: Insol. H₂O, alkali soln.

Other Data: Diamagnetic semiconductor

>>Variant: Molybdenum selenide (Mo₂Se₅)

CAS Registry Number: 115428-99-4

Molecular Formula: Mo₂Se₅

Molecular Weight: 586.68

Accurate Mass: 595.393412

Percentage Composition: Mo 32.71%; Se 67.29%

Source/Synthesis: Synth. by Zn reduction of H₂SO₄ soln. of ammonium molybdate followed by addition of H₂Se

Physical Description: Dense brownish-black leaflets

>>Variant: Molybdenum selenide (MoSe₃)