



>>Entry Name: Manganese(*II,III*) oxide (Mn₃O₄), 11CI

CAS Registry Number: 1317-35-7
Mn₃O₄

Molecular Formula: Mn₃O₄
Molecular Weight: 228.812
Accurate Mass: 228.793801
Percentage Composition: Mn 72.03%; O 27.97%

Source/Synthesis: Synth. by heating lower or higher valent oxides in O₂ or air above 950°
Use/Importance: High purity grades used in prod. of ferrites, thermistors, and in other electronic applications
Physical Description: Black cryst., dark red powder when finely divided. Forms MnO₂ and Mn²⁽⁺⁾ in acid soln. Reacts with F₂ to give MnF₃ and some MnF₂
Melting Point: Mp *ca.* 567°
Solubility: Insol. H₂O
Other Data: Ferromagnetic at *ca.* 42K

Aldrich: 37747-3

>>Variant: α-form

Molecular Formula: Mn₃O₄
Molecular Weight: 228.812
Accurate Mass: 228.793801
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>>Variant: β-form

Molecular Formula: Mn₃O₄
Molecular Weight: 228.812
Accurate Mass: 228.793801
Percentage Composition: Mn 72.03%; O 27.97%

Source/Synthesis: Synth. when the temp. of prep. is above 1170°

>>Variant: High pressure-form

Molecular Formula: Mn₃O₄
Molecular Weight: 228.812
Accurate Mass: 228.793801
Percentage Composition: Mn 72.03%; O 27.97%

Source/Synthesis: Synth. at 900° and 1.2 x 10³ atm.

>>Variant: Mineral-form

Synonym(s): Hausmannite, 11CI

CAS Registry Number: 1309-55-3
Molecular Formula: Mn₃O₄
Molecular Weight: 228.812
Accurate Mass: 228.793801
Percentage Composition: Mn 72.03%; O 27.97%

Source/Synthesis: Occurs in high temp. hydrothermal veins and contact metamorphic deposits, in association with e.g. magnetite, haematite
Physical Description: Brownish black opaque sub-metallic cryst.

References: