>>**Entry Name: Manganese(*II*) phosphate ($Mn_3(PO_4)_2$)**
Synonym(s): Manganese(2+) phosphate (3:2), 9CI, 8CI. Manganese(*II*) orthophosphate ($Mn_3(PO_4)_2$)

CAS Registry Number: 14154-09-7
Extra CAS Registry Numbers(s): 10124-54-6
$Mn_3(PO_4)_2$

Molecular Formula: $Mn_3O_8P_2$
Molecular Weight: 354.757
Accurate Mass: 354.720985
Percentage Composition: Mn 46.46%; O 36.08%; P 17.46%

Source/Synthesis: Anhydrous form by dehydration of hydrates e.g. hexahydrate at 250°, or heptahydrate at 450°. Also MnO + $Mn_2P_2O_7$ at *ca* 900°/high pressure
Physical Description: Pinkish-white cryst.
Melting Point: Mp 1119° (1100°)
Solubility: Spar. sol. H_2O. Part. sol. boiling HNO_3, H_2SO_4. Sol. in boiling mixture
Other Data: Amorphous form cryst. at 560-620°. $\Delta H^\circ_{f\,298}$ –3135 kJ mol^{-1}

>>**Derivative:** Trihydrate

CAS Registry Number: 39041-31-1
Source/Synthesis: Synth. by dehydration of heptahydrate at 150° or hexahydrate at 125°
Other Data: $\Delta H^\circ_{f\,298}$ –3975 kJ mol^{-1}. Dehydrates (–$3H_2O$) at 450° (280-360°). Strong heating → $Mn_2P_2O_7$

>>**Derivative:** Tetrahydrate

CAS Registry Number: 35829-90-4
Physical Description: Cryst.
Other Data: H_2O molecules are crystallographically non equivalent. Readily (40-100°) yields the trihydrate, the $3H_2O$ molecules being coordinated. Dehydrates completely at 305-510°. Further heating leads to condensed phosphates

>>**Derivative:** Hexahydrate

CAS Registry Number: 56808-91-4
Source/Synthesis: Synth. from $MnCl_2$ aq. + $NaHPO_4$ aq.
Use/Importance: Used in coatings on metals
Physical Description: Pale pink
Other Data: $\Delta H^\circ_{f\,298}$ –4859 kJ mol^{-1}. In dil. acid soln. → heptahydrate. Dehydrates (–$3H_2O$) at 110-125°. Paramagnetic down to –194°

>>**Derivative:** Heptahydrate

CAS Registry Number: 10236-39-2
Source/Synthesis: Synth. from $MnCl_2$ aq. + K_3PO_4 aq. or Na_3PO_4 aq.

>>**Variant:** Mineral-form
Synonym(s): Reddingite

CAS Registry Number: 1319-14-8
Molecular Formula: $Mn_3O_8P_2$
Molecular Weight: 354.757
Accurate Mass: 354.720985
Percentage Composition: Mn 46.46%; O 36.08%; P 17.46%

Source/Synthesis: Found in Poland, Japan and USA
Physical Description: Pinkish white or pale rose-pink, dipyramidal cryst.

>>**Variant:** Mineral-form
Synonym(s): Metaswitzerite

Molecular Formula: $Mn_3O_8P_2$
Molecular Weight: 354.757
Accurate Mass: 354.720985
Percentage Composition: Mn 46.46%; O 36.08%; P 17.46%

Source/Synthesis: Formed by loss of &3qu; of free H_2O from Switzerite by topotactic reaction

>>**Variant:** Mineral-form
Synonym(s): Switzerite