>>**Entry Name: Neodymium nitrate**
Synonym(s): Trinitratoneodymium

CAS Registry Number: 10045-95-1
Related CAS Registry Numbers(s): 14517-29-4 16454-60-7 26635-06-3
$Nd(NO_3)_3$

Molecular Formula: N_3NdO_9
Molecular Weight: 330.255
Accurate Mass: 327.871176
Percentage Composition: N 12.72%; Nd 43.68%; O 43.60%
Physical Description: Hygroscopic violet solid
Solubility: Sol. H_2O, EtOH
Other Data: Hexahydrate normally obt. on cryst; tetra- and pentahydrates also reported

>>**Derivative:** Hydrate

CAS Registry Number: 13746-96-8
Other Data: Contains variable amts. H_2O
Aldrich: 21720-4

>>**Derivative:** Hexahydrate
Synonym(s): Neodymium nitrate hexahydrate

CAS Registry Number: 63643-73-2
Molecular Formula: $H_{12}N_3NdO_{15}$
Molecular Weight: 438.346
Accurate Mass: 435.934566
Percentage Composition: H 2.76%; N 9.59%; Nd 32.91%; O 54.75%
Use/Importance: Commercially available
Physical Description: Violet cryst.
Solubility: Sol. H_2O, EtOH, Me_2CO
Other Data: Contains 10-coord. $Nd(NO_3)_3(H_2O)_4$ molecules; isomorphous with Pr analogue

>>**Derivative:** DMF complex, trihydrate
Synonym(s): Triaqua(*N,N*-dimethylformamide)trinitratoneodymium

Molecular Formula: $C_3H_{13}N_4NdO_{13}$
Molecular Weight: 457.395
Accurate Mass: 454.955635
Percentage Composition: C 7.88%; H 2.86%; N 12.25%; Nd 31.54%; O 45.47%
Physical Description: Rose cryst. + H_2O
Other Data: Has 10-coord. Nd (nitrates bidentate) in approx. bicapped square antiprismatic geometry

>>**Derivative:** Bis-Ph_3PO complex

CAS Registry Number: 14706-33-3
Molecular Formula: $C_{36}H_{30}N_3NdO_{11}P_2$
Molecular Weight: 886.834
Accurate Mass: 884.04328
Percentage Composition: C 48.76%; H 3.41%; N 4.74%; Nd 16.26%; O 19.85%; P 6.99%
Physical Description: Pale lilac needles + EtOH (EtOH/$CHCl_3$)
Melting Point: Mp 161-170 dec.° (EtOH adduct)
Solubility: Sl. sol. EtOH
Other Data: 9-Coord. with bidentate nitrates and EtOH coord.; EtOH cannot be removed on heating

References: