>>**Entry Name: Samarium acetate**
Synonym(s): Samarium triacetate

CAS Registry Number: 10465-27-7
Related CAS Registry Numbers(s): 17829-87-7 72555-95-4 100587-91-5
Extra CAS Registry Numbers(s): 17829-86-6
$Sm(OAc)_3$

Molecular Formula: $C_6H_9O_6Sm$
Molecular Weight: 327.493
Accurate Mass: 328.959644
Percentage Composition: C 22.01%; H 2.77%; O 29.31%; Sm 45.91%
Use/Importance: Commercially available as hydrate
Physical Description: V. hygroscopic yellow solid
Solubility: Sol. H_2O
Other Data: Absorbs H_2O in air to form monohydrate. Dec. >280°. Dec. successively to form $Sm_2O_2(CO_3)$, SmO(OAc) and Sm_2O_3

>>**Derivative:** Dihydrate

Molecular Formula: $C_6H_{13}O_8Sm$
Molecular Weight: 363.524
Accurate Mass: 364.980774
Percentage Composition: C 19.82%; H 3.60%; O 35.21%; Sm 41.36%
Physical Description: Yellow cryst. + HOAc
Other Data: Dimeric struct. with 4 bridging OAc and 2 chelating OAc; each Sm is 8-coord. Sm-Sm 395.9 pm

>>**Derivative:** Trihydrate

Molecular Formula: $C_6H_{15}O_9Sm$
Molecular Weight: 381.539
Accurate Mass: 382.991339
Percentage Composition: C 18.89%; H 3.96%; O 37.74%; Sm 39.41%
Solubility: Sol. H_2O

>>**Derivative:** Tetrahydrate

CAS Registry Number: 15280-52-1
Molecular Formula: $C_6H_{17}O_{10}Sm$
Molecular Weight: 399.554
Percentage Composition: C 18.04%; H 4.29%; O 40.04%; Sm 37.63%
Physical Description: Yellow cryst.
Solubility: Sol. H_2O
Other Data: Dec. above 70°. Initial products are $Sm(OAc)_3.xH_2O$ (x = 1, 0.5), eventually affording anhyd. acetate

>>**Derivative:** DMF complex

Molecular Formula: $C_9H_{16}NO_7Sm$
Molecular Weight: 400.588
Percentage Composition: C 26.99%; H 4.03%; N 3.50%; O 27.96%; Sm 37.53%
Physical Description: Yellow solid
Melting Point: Mp 137-140°
Other Data: Loses DMF *in vacuo* at 210°

>>**Derivative:** Tris-urea complex

CAS Registry Number: 41579-93-5
Molecular Formula: $C_9H_{21}N_6O_9Sm$
Molecular Weight: 507.66
Percentage Composition: C 21.29%; H 4.17%; N 16.55%; O 28.36%; Sm 29.62%
Physical Description: Yellow cryst. + $1.5H_2O$
Solubility: Sol. H_2O