



>>Entry Name: Uranium chloride oxide (UCl₂O₂)

Synonym(s): Dichlorodioxouranium(*VI*). Uranyl chloride

CAS Registry Number: 7791-26-6

UO₂Cl₂

Molecular Formula: Cl₂O₂U

Molecular Weight: 340.933

Accurate Mass: 339.978318

Percentage Composition: Cl 20.80%; O 9.39%; U 69.82%

Source/Synthesis: Synth. from hydrated compd. by dehydration in HCl/Cl₂ atm. at 450°

Use/Importance: Forms complexes with many O-donor ligands

Physical Description: Hygroscopic, bright yellow solid

Melting Point: Mp 578°

Solubility: Sol. H₂O, common polar org. solvs.

Other Data: Affords U₃O₈ on ignition in air. Ir ν_{U=O} 960 (asymm), 871 (symm) cm⁻¹

>>Derivative: Monohydrate

CAS Registry Number: 18696-33-8

Molecular Formula: Cl₂H₂O₃U

Molecular Weight: 358.948

Accurate Mass: 357.988883

Percentage Composition: Cl 19.75%; H 0.56%; O 13.37%; U 66.31%

Physical Description: Hygroscopic yellow powder

Solubility: Sol. H₂O, EtOH, Me₂CO

Other Data: 7-Coord. Dec. > 300°

>>Derivative: Trihydrate

CAS Registry Number: 13867-67-9

Molecular Formula: Cl₂H₆O₃U

Molecular Weight: 394.979

Accurate Mass: 394.010013

Percentage Composition: Cl 17.95%; H 1.53%; O 20.25%; U 60.26%

Use/Importance: Yellow cryst.

Solubility: Sol. H₂O

Other Data: Raman ν_{U=O} 955, 950 cm⁻¹. Dehydrates to monohydrate at 150°

>>Derivative: THF complex (1:2)

Synonym(s): Di-μ-chlorodichlorotetraoxotetrakis(tetrahydrofuran)diuranium

Molecular Formula: C₈H₁₆Cl₂O₄U

Molecular Weight: 485.146

Accurate Mass: 484.093348

Percentage Composition: C 19.81%; H 3.32%; Cl 14.62%; O 13.19%; U 49.06%

Source/Synthesis: Obtd. when impure 'UCl₄' recryst. from THF

Physical Description: Cryst.

Other Data: In solid state has dimeric struct. with 7-coord. uranium and two bridging chlorines

References: