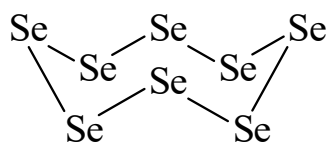




>>Entry Name: Selenium, 11Cl

ENTRY UNDER REVIEW



CAS Registry Number: 7782-49-2

Related CAS Registry Numbers(s): 14701-24-7 14809-46-2 22541-55-5 54603-71-3

Molecular Formula: Se

Molecular Weight: 78.96

Accurate Mass: 79.91652

Percentage Composition: Se 100.00%

Berzelius. Exists in 6 allotropic forms: α , β , γ , grey "metallic", red amorphous, black vitreous. The α , β , and γ forms are all monoclinic with Se_8 rings. Grey, "metallic" comprises hexagonal helical polymeric chains. Struct. of black vitreous form is complex, irregular struct. of large polymeric rings

Source/Synthesis: $9 \times 10^{-6}\%$ abundant in lithosphere. Occurs native but mostly as metal selenides. Isol. as byproduct of electrolytic refining of Cu and from sludge in H_2SO_4 plants

Use/Importance: Biologically essential. Commercially available. Used in xerography, as glass decolouriser, as photoconductor in photoelectric cells, as a rectifier in semiconductor devices. Minor use in metallurgy and Cr plating. Component of *Vandex* used in rubber industry

Physical Description: Visc. of liq. decreases with temp., unlike S. Grey Se cryst. most stable form, conductor, photoconductor

Melting Point: Mp 217° (grey)

Solubility: Grey Se insol. CS_2 ; black vitreous and red amorphous forms spar. sol. CS_2 ; sol. conc. H_2SO_4 forming $\text{Se}_4^{2(+)}$ in yellow-green soln.

Other Data: d 4.82 (grey form), 4.46 (monoclinic form). Recommended Dietary Allowance (RDA) of 55 and 70 μg /day for men and women respectively

Hazard & Toxicity: OES: long-term 0.1 mg m^{-3} . LD_{50} (rat, orl) 6700 mg/kg. LD_{50} (rat, ivn) 6 mg/kg

Aldrich: 20430-7

Fluka: 84890

>>Variant: Selenium (Se_2)

Synonym(s): Diselenium

CAS Registry Number: 12185-17-0

Molecular Formula: Se_2

Molecular Weight: 157.92

Accurate Mass: 159.83304

Percentage Composition: Se 100.00%

Physical Description: Present, together with Se_6 in the vapour of Se above 900°

>>Variant: Selenium (Se_3)

CAS Registry Number: 12597-24-9

Physical Description: Identified by ms in the vapour of Se above 900°

>>Variant: Selenium (Se_4)

CAS Registry Number: 35996-94-2

Molecular Formula: Se_4

Molecular Weight: 315.84

Accurate Mass: 319.66608

Percentage Composition: Se 100.00%

Physical Description: Identified by ms in the vapour of Se above 900°

>>Variant: Selenium (Se_5)

CAS Registry Number: 12597-28-3

Molecular Formula: Se_5

Molecular Weight: 394.8

Accurate Mass: 399.5826

Percentage Composition: Se 100.00%

Physical Description: Identified by ms in the vapour of Se above 900°