>>**Entry Name: Copper sulfide (CuS),** 8Cl
Synonym(s): Cupric sulfide

CAS Registry Number: 1317-40-4
CuS or $Cu_4^{I}Cu_2^{II}(S_2)_2S_2$

Molecular Formula: CuS
Molecular Weight: 95.612
Accurate Mass: 94.911668
Percentage Composition: Cu 66.46%; S 33.54%
General Statement: Has unique struct. with 1/3 Cu 3-coordinate in a triangle, 2/3 tetrahedral; 2/3 of S atoms are S_2 groups
Use/Importance: Has many uses including: catalysis; batteries; semiconductors; paint
Physical Description: Dark blue to black powder. Stable in air when dry. Oxidises to $CuSO_4$ in moist air
Melting Point: Mp 200°
Solubility: Insol. H_2O, EtOH, dilute acids; sol. hot conc. HNO_3

Aldrich: 34246-7

>>**Variant:** Mineral-form
Synonym(s): Covelline. Covellite

CAS Registry Number: 19138-68-2
Molecular Formula: CuS
Molecular Weight: 95.612
Accurate Mass: 94.911668
Percentage Composition: Cu 66.46%; S 33.54%
Source/Synthesis: Occurs at locations in USA, Argentina, New Zealand, Germany and elsewhere
Physical Description: Light to v. dark indigo blue, often with bright purplish iridescence, trigonal cryst.

References:

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Ribble, T.J.*, Phys. Status Solidi A*, 1971, **6**, 473, *(struct)*
Lutz, H.D. *et al.*, *Z. Naturforsch., B*, 1971, **26**, 1096, *(synth, ir)*
Dutrizac, J.E. *et al.*, *Mater. Res. Bull.*, 1973, **8**, 961
Brauer, G.*, Handbuch Prap. Anorg. Chem.*, 3rd edn., Ferdinand Enke Verlag, 1975, 1017, *(synth)*
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