



>>Entry Name: **Hydroxyurea**, 9CI, BAN, USAN

**Synonym(s):** Carbamoylhydroxylamine. Carbamohydroxamic acid. *N*-(Aminocarbonyl)hydroxylamine. *N*-Carbamoylhydroxylamine. **Hydroxycarbamide**, INN. Hydura. Litalir. Onco-Carbide. Biosupressin. Hidrix. Hydrea. SQ 1089. NSC 32065

**CAS Registry Number:** 127-07-1

$\text{HONHCONH}_2 \rightleftharpoons \text{HON}=\text{C}(\text{OH})\text{NH}_2$

**Molecular Formula:**  $\text{CH}_4\text{N}_2\text{O}_2$

**Molecular Weight:** 76.055

**Accurate Mass:** 76.027278

**Percentage Composition:** C 15.79%; H 5.30%; N 36.83%; O 42.07%

**Use/Importance:** Antineoplastic agent. Inhibits DNA synthesis by inactivating ribonucleotide reductase. Radical scavenger

**Physical Description:** Cryst.

**Melting Point:** Mp 70-72 dec.°. Mp 141° (dimorph.)

**Solubility:** Insol.  $\text{Et}_2\text{O}$ ,  $\text{C}_6\text{H}_6$

**Calculated Log P Data:** Log P -1.8 (calc)

**Hazard & Toxicity:** Haemopoietic effects when used therapeutically. LD<sub>50</sub> (mus, ipr) 5800 mg/kg. Exp. reprod. and teratogenic effects. Mutagenic props. Aq. solns. can show explosive thermal dec. at 70°

**Aldrich:** 11520-7

**Fluka:** 55291

**Sigma:** H8627

>>Derivative: *N*<sup>1</sup>-Me

**Synonym(s):** *N*-Hydroxy-*N*-methylurea

**CAS Registry Number:** 7433-43-4

**Molecular Formula:**  $\text{C}_2\text{H}_6\text{N}_2\text{O}_2$

**Molecular Weight:** 90.082

**Accurate Mass:** 90.042928

**Percentage Composition:** C 26.67%; H 6.71%; N 31.10%; O 35.52%

**Use/Importance:** DNA synthesis inhibitor, having about half the activity of hydroxyurea. Radical scavenger

**Physical Description:** Cryst.

>>Derivative: *N*<sup>2</sup>-Me

**Synonym(s):** *N*-Hydroxy-*N'*-methylurea

**CAS Registry Number:** 7433-46-7

**Molecular Formula:**  $\text{C}_2\text{H}_6\text{N}_2\text{O}_2$

**Molecular Weight:** 90.082

**Accurate Mass:** 90.042928

**Percentage Composition:** C 26.67%; H 6.71%; N 31.10%; O 35.52%

**Use/Importance:** DNA synthesis inhibitor having about half the activity of hydroxyurea. Radical scavenger

**Physical Description:** Tablets

**Melting Point:** Mp 127 dec.°

**Solubility:** V. sol.  $\text{H}_2\text{O}$

>>Derivative: Me ether

**Synonym(s):** Methoxyurea

**CAS Registry Number:** 3272-27-3

**Molecular Formula:**  $\text{C}_2\text{H}_6\text{N}_2\text{O}_2$

**Molecular Weight:** 90.082

**Accurate Mass:** 90.042928

**Percentage Composition:** C 26.67%; H 6.71%; N 31.10%; O 35.52%

**Melting Point:** Mp 84°

**Rare Chemicals Library:** S80299-9