



>>Entry Name: **2,2'-Azobis[2-methylpropanoic acid]**, 9CI

Synonym(s): 2,2'-Azodi-2-methylpropionic acid. Azoisobutyric acid

CAS Registry Number: 27189-40-8

HOCC(CH₃)₂N=NC(CH₃)₂COOH

Molecular Formula: C₈H₁₄N₂O₄

Molecular Weight: 202.21

Accurate Mass: 202.095358

Percentage Composition: C 47.52%; H 6.98%; N 13.85%; O 31.65%

>>Derivative: Di-Me ester

CAS Registry Number: 2589-57-3

Molecular Formula: C₁₀H₁₈N₂O₄

Molecular Weight: 230.263

Accurate Mass: 230.126658

Percentage Composition: C 52.16%; H 7.88%; N 12.17%; O 27.79%

Use/Importance: Azo polymerisation initiator

Physical Description: Platelets (petrol)

Melting Point: Mp 33°

Other: Wako

>>Derivative: Di-Et ester

CAS Registry Number: 3879-07-0

Molecular Formula: C₁₂H₂₂N₂O₄

Molecular Weight: 258.317

Accurate Mass: 258.157958

Percentage Composition: C 55.80%; H 8.58%; N 10.84%; O 24.77%

Physical Description: Liq.

>>Derivative: Diamide

CAS Registry Number: 3682-94-8

Molecular Formula: C₈H₁₆N₄O₂

Molecular Weight: 200.24

Accurate Mass: 200.127326

Percentage Composition: C 47.99%; H 8.05%; N 27.98%; O 15.98%

Physical Description: Cryst. + 2H₂O (EtOH aq.)

Melting Point: Mp 94-95 dec., 104° (anhyd.)

>>Derivative: Dinitrile

Synonym(s): Azoisobutyronitrile. AIBN. Azobisisobutyronitrile. Genitron AZDN. Pianofor An. Vazo 64. AZDH. AZDN

CAS Registry Number: 78-67-1

Molecular Formula: C₈H₁₂N₄

Molecular Weight: 164.21

Accurate Mass: 164.106196

Percentage Composition: C 58.52%; H 7.37%; N 34.12%

Use/Importance: Radical initiator, e.g. for polym.

Physical Description: Cryst. (EtOH)

Melting Point: Mp 107 dec.°

Solubility: Insol. H₂O; sol. EtOH

Hazard & Toxicity: Technical material has exploded on recryst. from Me₂CO. Mild eye irritant. LD₅₀ (mus, orl) 700 mg/kg. Autoignition temp. 64°

Aldrich: 44109-0

Fluka: 11630

Rare Chemicals Library: S45828-7

Sigma: A5895

References:

Thiele, J. *et al.*, *Annalen*, 1896, **290**, 1

Fieser and Fieser's *Reagents for Organic Synthesis*, Wiley, 1967, **1**, 45

Kirk-Othmer *Encycl. Chem. Technol.*, 3rd edn., Wiley, 1978, **15**, 901, (rev)

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, ASL750

Bretherick, L., *Handbook of Reactive Chemical Hazards*, 4th edn., Butterworths, 1990, 2817