

MALONONITRILE



CAS Number: 109-77-3

Other Names: Propanedinitrile; Dicyanomethane; Malonic dinitrile
Cyanoacetoneitrile, Methylene cyanide; Dicyanmethane

Formula: $C_3H_2N_2$ or $NCCH_2CN$ or $CH_2(CN)_2$

PRODUCT INTRODUCTION

Malononitrile is a dinitrile that is methane substituted by two cyano groups with chemical formula $CH_2(CN)_2$. It appears as a white-colored crystalline solid. It is denser than water and soluble in water. Malononitrile is relatively acidic, with a pKa of 11 in water.

PHYSICAL AND CHEMICAL PROPERTIES

Assay	99.9 %
Water	0.02 % w/w
3-CPN	< 0.02 % area
LZ-2871	< 0.02 % area
MADN	0.05 % area
BDN	< 0.02 % area
Impurities (before main pk.)	0.03 % area
Impurities (after main pk.)	< 0.02 % area

APPLICATIONS

- Malononitrile is used as a precursor in the preparation of anti-cancer drug, triamterene, adenine, methotrexate, thiamine, acrylic fibers and dyes.
- Crosslinking agent for modification of proteins via amidation.
- It is used in Knoevenagel condensation to prepare 2-chlorobenzalmalononitrile by reacting with 2-chlorobenzaldehyde.
- It acts as a leaching agent for gold.
- It is used as a raw material for the Gewald reaction of ketone or aldehyde to produce 2-aminothiophene using elemental sulfur and a base.

- Further, it plays an important role in the preparation of [1,6]-naphthyridines, gamma-ketoamides, 1,4-dihydropyridine, chromeno[2,3-b]pyridine and dihydro-1,4-dithiepine frameworks

PACKAGING OPTIONS

Drums

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