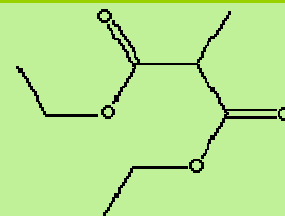


DIETHYL METHYLMALONATE

PRODUCT IDENTIFICATION

CAS NO.	609-08-5
EINECS NO.	210-175-7
FORMULA	CH ₃ CH(CO ₂ C ₂ H ₅) ₂
MOL WT.	174.20
H.S. CODE	2917.19
TOXICITY	Oral rat LD50: 5000 mg/kg
SYNONYMS	Propanedioic acid, methyl-, diethyl ester;



Diethyl 2-methylpropanedioate; Methylmalonic acid diethyl ester; Diethyl 2-methylmalonate; Methylmalonic acid diethyl ester; Metilmalonato di dietile (Italian); Methylmalonsäurediethylester (German); Méthylmalonate de diéthyle (French);

RAW MATERIALS

CLASSIFICATION

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Clear liquid
MELTING POINT	
BOILING POINT	198 - 199 C
SPECIFIC GRAVITY	1.020 - 1.025
SOLUBILITY IN WATER	Immiscible
pH	
VAPOR DENSITY	
REFRACTIVE INDEX	1.412 - 1.414
NFPA RATINGS	
AUTOIGNITION	
FLASH POINT	85 C
STABILITY	Stable under ordinary conditions

GENERAL DESCRIPTION & APPLICATIONS

Malonic acid (also called Propanedioic Acid) is a white crystalline C-3 dicarboxylic acid; melting at 135 -136 C; readily soluble in water, alcohol and ether; solution in water is medium-strong acidic. It can be derived by oxidizing malic acid or by the hydrolysis of cyanacetic acid. Malonic acid itself is rather unstable and has few applications. Its diethyl ester (diethyl malonate) is more important commercially. Diethyl malonate, a colourless, fragrant liquid boiling at 199 C, is prepared by the reaction of monochloroacetatic acid with methanol, carbon monoxide or by the reaction cyanoacetic acid (the half nitriled-malonic acid) with ethyl alcohol. Malonic acid and its esters contain active methylene groups which have relatively acidic alpha-protons due to H atoms adjacent to two carbonyl groups. The reactivity of its methylene group provide the sequence of reactions of alkylation, hydrolysis of the esters and decarboxylation resulting in substituted ketones. The methylene groups in 1,3-dicarboxylic acid utilize the synthesis of barbiturates; a hydrogen atom is removed by sodium ethoxide, and the derivative reacts with an alkyl halide to form a diethyl alkylmalonate. The diethyl dialkylmalonates are converted to barbiturates by reaction with urea. Malonic acid and its esters are characterized by the large number of condensation products. They are important intermediates in syntheses of vitamins B1 and B6, barbiturates, non-steroidal anti-inflammatory agents, other numerous pharmaceuticals, agrochemicals and flavors & fragrances compounds.

SALES SPECIFICATION

APPEARANCE	Clear liquid
ASSAY (G.C)	99.0% in

METHYLMALONIC ACID	1.0% max
DIETHYL MALONATE	0.3% max
WATER	0.1% max
ETHANOL	0.1% max
TOLUENE	0.05% max
ETHYL PROPIONATE	0.3% max
ETHYL LACTATE	0.05% max
INDIVIDUAL IMPURITY	0.1% max
TRANSPORTATION	
PACKING	200kgs in Drum
HAZARD CLASS	
UN NO.	
OTHER INFORMATION	