

Specification Sheet

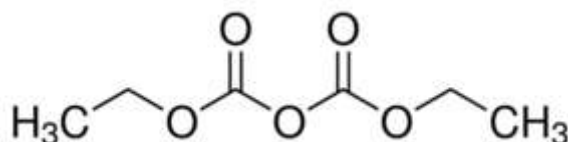
D5758 Sigma-Aldrich

Diethyl pyrocarbonate

≥97% (NMR)

Synonym: DEP, DEPC, Diethyl dicarbonate, Diethyl oxydiformate, Ethoxyformic acid anhydride

- CAS Number [1609-47-8](#)
- Linear Formula $O(COOC_2H_5)_2$
- Molecular Weight 162.14
- Beilstein/REAXYS Number 637031
- EC Number [216-542-8](#)
- MDL number [MFCD00009106](#)
- PubChem Substance ID [24893964](#)
- NACRES NA.77



SKU-Pack Size	Availability	Pack Size	Price (SGD)	Quantity
D5758-5ML	Available to ship on 15.04.2021 - FROM	5 mL		<input type="text" value="0"/>
D5758-25ML	Available to ship on 15.04.2021 - FROM	25 mL		<input type="text" value="0"/>
D5758-50ML	Estimated to ship on 28.04.2021 - FROM	50 mL		<input type="text" value="0"/>
D5758-100ML	Available to ship on 15.04.2021 - FROM	100 mL		<input type="text" value="0"/>

Properties

Related Categories [Biochemicals](#), [Biochemicals and Reagents](#), [Carboxypeptidase P](#), [Core Bioreagents](#), [Enzyme Inhibitors](#),

Quality Level [200](#)



biological source	synthetic (microbial fermentation/ cell culture)
assay	≥97% (NMR)
form	liquid
refractive index	$n_{20/D}$ 1.398 (lit.)
bp	93-94 °C/18 mmHg (lit.)
density	1.101 g/mL at 25 °C (lit.)
shipped in	wet ice
storage temp.	2-8°C
SMILES string	<chem>CCOC(=O)OC(=O)OCC</chem>
InChI	1S/C6H10O5/c1-3-9-5(7)11-6(8)10-4-2/h3-4H2,1-2H3
InChI key	FFYPMLJYZAEMQB-UHFFFAOYSA-N

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Description

General description

Diethyl Pyrocarbonate (DEPC) is a chemical use to inactivate RNase enzymes and is sensitive to moisture and pH. It decomposes at 155°C, to ethanol and carbon dioxide in aqueous solution. DEPC is also sensitive to ammonia, which causes decomposition to urethane, a possible carcinogen.

Application

Diethyl pyrocarbonate has been used in PCR reaction for treating deionized water, which reduces the risk of RNA being degraded by RNases.^[1] It is also used for Dot blot hybridization, to dilute total RNA isolated from different micro-organisms.^[2] Modification reagent for His and Tyr residues in proteins. Robust probe for structural disruptions in dsDNA, reacting with fully or partially unstacked bases.

Packaging

5, 25, 50, 100 mL in glass bottle



Biochem/physiol Actions

DEPC is a potent nuclease inhibitor.^{[3][4]} 0.1% solution of DEPC is used to inactive RNase.

It inhibits the ryanodine binding to ryanodine/Ca²⁺ receptor channels in skeletal muscle in a dose and time dependent manner and increases the Ca²⁺ permeability of SR vesicles.^[5]

Inactivates RNase in solution at about 0.1% (v/v), thus protecting RNA against degradation.

