1-Butylimidazole

PRODUCT IN FOCUS

EXSYN®
ESSENTIAL CHEMISTRY

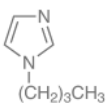
1-Butylimidazole

INTRODUCTION

1-Butylimidazole is a versatile organic heterocyclic compound belonging to the imidazole family, where a butyl group ($–CH_2–CH_2–CH_2–CH_3$) is attached to the nitrogen atom at the 1-position of the imidazole ring. Its applications span organic synthesis, materials science, and bioactive compound development due to its tunable physicochemical properties and structural versatility.

Manufacture

1-Butylimidazole is industrially synthesized through the alkylation of imidazole with a butyl halide (like 1-chlorobutane) or butyl iodide, often in the presence of a base such as sodium hydroxide, potassium hydroxide, or other suitable inorganic or organic bases leading to deprotonation of imidazole.
The crude product is further purified by distillation.

Synonyms	1-Butyl-1H-imidazole
CAS no.	4316-42-1
EINECS no.	224-335-9
Molecular formula	$C_7H_{12}N_2$
Molecular weight	124.18
Structure	

Applications

An important intermediate in the synthesis of various chemical compounds, including ionic liquids and other pharmaceuticals, it is also used as a ligand in coordination chemistry and in the synthesis of materials for chiral separation.

- **Chemical Intermediate**
  - ➢As a building block for Imidazole derivatives
  - ➢Used as a starting material to prepare 1-butyl-3-substituted imidazolium salts.
- **Ionic Liquid Synthesis**
  As a building blocks of ionic liquids, which have wide industrial and research applications.
- **Catalysis & Ligand Chemistry**
  1-Butylimidazole and its salts are explored in :
  - ➢Homogeneous catalysis
  - ➢Organocatalysis (via N-heterocyclic carbene precursors)
  - ➢Phase-transfer catalysis
- **Pharmaceutical & Material Science Research**
  1-Butylimidazole is a precursor for synthesizing various active ingredients in antiviral drugs
- **Solvent & Reaction Medium**
  Its salt derivatives are used as green solvents (ionic liquid form) for organic synthesis, polymerization, and biomass processing.
  As electrolytes in batteries, fuel cells, and supercapacitors
- **Agrochemicals**
  Used as a building block for active ingredients in fungicides and herbicides.
- **Materials Science**
  It acts as a curing agent for epoxy resins, improving their mechanical properties, chemical resistance, and adhesion in coatings, adhesives, and composites

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SPECIFICATIONS

Test	Unit	Specification
Appearance	-	Colourless to pale yellow liquid
Identification (By GC)	-	Should conform to the standard
Water Content	%	Max 1.0
Purity (By GC)	% Area	Min 99.0
Any single Impurity	%	NMT 0.5

STORAGE & PRECAUTION
Store at ambient conditions

PACKING
25 kg HDPE UN approved drum.

REACH Status
Not registered

ExSyn offers 1-Butylimidazole on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.