

6-Bromopyridine-2,3-diamine



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EXSYN[®]
ESSENTIAL CHEMISTRY

6-Bromopyridine-2,3-diamine

INTRODUCTION

6-Bromopyridine-2,3-diamine is a heterocyclic organic compound belonging to the class of substituted pyridines. It is used mainly as an intermediate in pharmaceuticals and agrochemicals.

MANUFACTURE

6-Bromopyridine-2,3-diamine is obtained by reducing 6-bromo-3-nitro-2-pyridinamine under carefully controlled reaction conditions. The intermediate, 6-bromo-3-nitro-2-pyridinamine, is synthesized from the readily available 2-amino-6-chloro-3-nitropyridine through a halogen exchange reaction using hydrogen bromide in acetic acid under controlled conditions.

Synonyms

6-Bromo-2,3-pyridinediamine; 2,3-Diamino-6-bromopyridine

CAS no.

129012-04-0

EINECS no.

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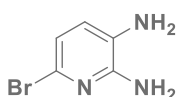
Molecular formula

C₅H₆BrN₃

Molecular weight

188.03

Structure



APPLICATIONS

6-Bromopyridine-2,3-diamine is a valuable heterocyclic intermediate with a range of applications. Its utility comes from the presence of both reactive amine groups (-NH₂) and a bromine substituent, which allow diverse chemical transformations.

ⓧ Pharmaceutical Applications:

Intermediate for drug synthesis:

- Acts as a key building block in the synthesis of biologically active heterocycles.
- The diamine functionality enables formation of Imidazoles, Triazines and Quinazoline derivatives.
- These scaffolds are commonly found in: Anticancer agents, Antimicrobial drugs, Anti-inflammatory compounds.

Kinase inhibitor development:

- Frequently used in designing protein kinase inhibitors due to its ability to form hydrogen bonds with biological targets.
- The bromine atom allows further functionalization *via* cross-coupling reactions (e.g. Suzuki, Buchwald–Hartwig, etc.).

ⓧ Agrochemical Applications:

- Serves as an intermediate in the synthesis of Herbicides, Fungicides and Insecticides.
- Nitrogen-rich heterocycles derived from it often show: Enhanced biological activity, Target specificity toward pests or weeds.

ⓧ Material Science Applications:

- Used in the synthesis of functional organic materials and as a ligands for coordination chemistry.
- Potential roles include-Organic semiconductors, Dye intermediates, Polymer modifiers.

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SPECIFICATIONS

Test	Unit	Specification
Appearance	-	Light brown solid
Identification by ¹ H NMR	-	Complies with the product structure
Purity by HPLC	%	NLT 97
Purity by Assay	%	NLT 97
2,3-Diamino-6-chloropyridine	%	NMT 1.5

STORAGE & PRECAUTION

Keep container tightly closed. Store in a cool, dry, well-ventilated area

PACKING

Globally compliant packaging

REACH Status

Not registered

ExSyn offers 6-Bromopyridine-2,3-diamine 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.