

Chiral Ligands

*Assure predictable selectivities,
excellent reactivity and yields,
producing high chiral purities*

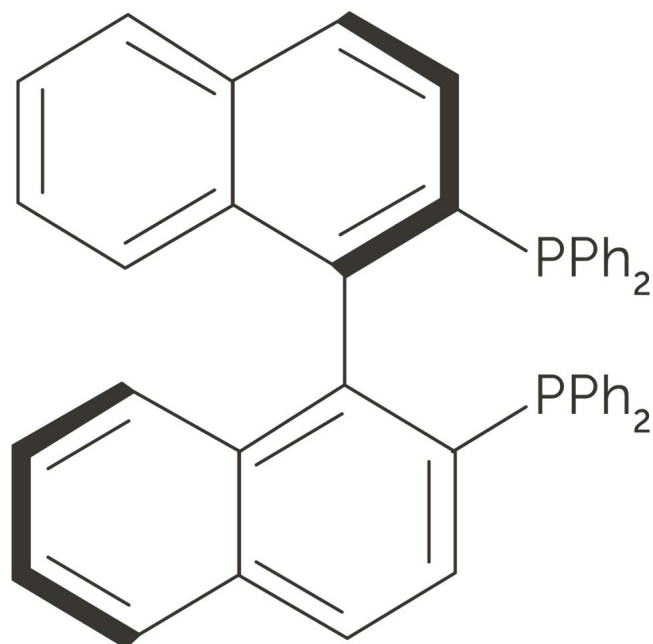
As a leader in specialty chemicals and advanced materials for the microelectronics, life sciences, and other high-tech industries, we can accelerate your new product development efforts and manufacturing supply chain by providing critical materials at the appropriate scale, and within the communi-cated delivery schedule. Our portfolio of chiral ligands is tailored to your manufacturing requirements and specifica-tions to meet your high-quality customized needs.

Our standard chiral ligand portfolio includes widely referenced, intellectual property-free phosphine ligands for asymmetric chemical transformations. Consistently manufactured to meet or exceed specifications, our chiral ligands assure predictable selectivities, excellent reactivity and yields, producing high chiral purities.

Our experienced R&D teams provide deep chemistry expertise in an innovative culture to deliver custom synthesis solutions that meet your proprietary development needs. With our extensive manufacturing capabilities, we can handle a range of projects from grams to metric ton quantities, through scale-up and full commercialization. We also provide chemical process development, piloting, and custom chemical manufacturing.

APPLICATIONS

- Active pharmaceutical ingredients (APIs) for small molecule drug manufacturing
- Industrial manufacturing including for flavor and fragrances and agricultural industries



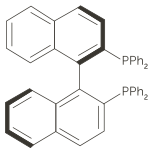
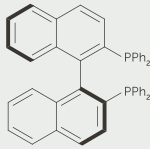
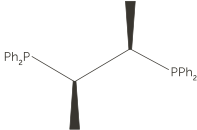
FEATURES & BENEFITS

High purity ligands	Enable reproducible and economical manufacturing with highest quality and purities for consistent yields and results
Air, moisture, and thermally stable	Allows for safe handling ease, cost-efficient loading, and a more predictable performance outcome
Customer collaboration	Proactive and regular team communication and encouraged site visits enable beneficial idea exchange and enhance on-track progress
Advanced scientific expertise	Technical transfers, R&D, scale-up optimization, and continuous improvement are conducted by PhD chemist-led teams that are supported by world-class quality and analytical resources
ISO 9001 and 14001 certifications	<p>The Entegris quality management system (QMS) certified by the ISO 9001 standard ensures provision of consistent quality products meeting customer and regulatory requirements</p> <p>The Entegris environmental management system (EMS) following the ISO 14001 standard assures a strategic and integrated approach to managing and improving environmental performance</p>

SPECIFICATIONS

Our products are made to strict specifications and our experienced R&D teams can partner with you to meet your proprietary development needs. With our manufacturing capabilities and resources, we can deliver on communicated timing requirements as well as high-quality customized solutions. [Contact us](#) with your specifications.

Product Portfolio

Catalog #	CAS #	Common Name	Product	Structure
BIS0325	76189-55-4	R-BINAP	(R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl	
BIS0459	76189-56-5	S-BINAP	(S)-(-)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl	
BIS0509	74839-84-2	(R,R)-Chiraphos	(2R,3R)-(+)-Bis(diphenylphosphino)butane	

FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit entegris.com and select the [Contact Us](#) link to find the customer service center nearest you.

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