

# Chiral Ligands

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

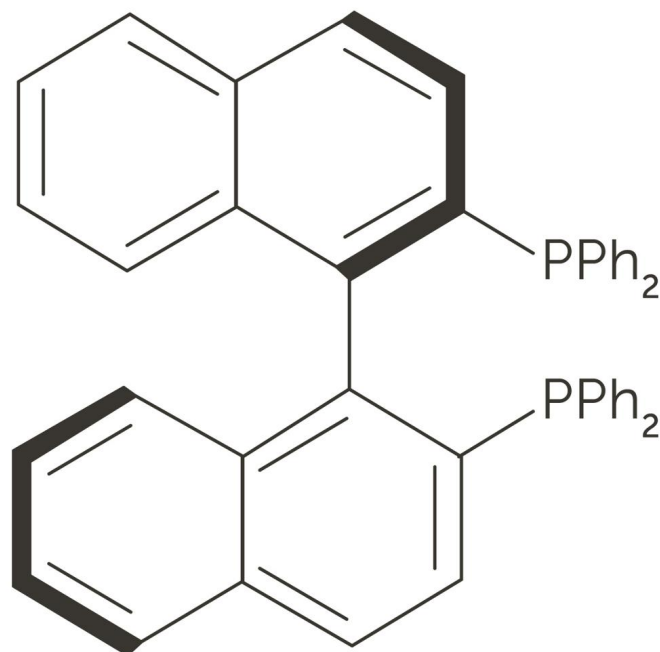
As a leader in specialty chemicals and advanced materials for the microelectronics, life sciences, and other high-tech industries, we can accelerate your new product development efforts and manufacturing supply chain by providing critical materials at the appropriate scale, and within the communicated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



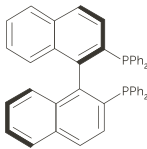
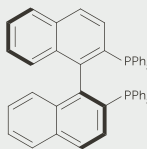
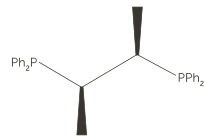
## FEATURES & BENEFITS

<b>High purity ligands</b>	Enable reproducible and economical manufacturing with highest quality and purities for consistent yields and results
<b>Air, moisture, and thermally stable</b>	Allows for safe handling ease, cost-efficient loading, and a more predictable performance outcome
<b>Customer collaboration</b>	Proactive and regular team communication and encouraged site visits enable beneficial idea exchange and enhance on-track progress
<b>Advanced scientific expertise</b>	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
<b>ISO 9001 and 14001 certifications</b>	<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](http://entegris.com) and select the [Contact Us](#) link to find the customer service center nearest you.

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