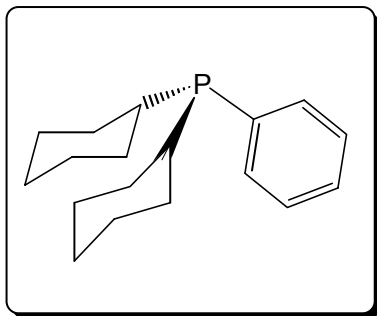


# DICYCLOHEXYLPHENYLPHOSPHINE

## PRODUCT INFORMATION

### DESCRIPTION

Arkema Inc. Dicyclohexylphenylphosphine [CAS 6476-37-5] is a white to off-white solid with the following properties:



### TYPICAL PROPERTIES

Formula	C <sub>18</sub> H <sub>27</sub> P
EINECS No.	2293347
Molecular Weight	274.37
Melting Point (°C)	57-59
% DCHP	98% (min)
% Phosphine Oxide	2.0% (max)
Solubility	Insoluble in water. Slightly soluble in alcohols. Soluble in alkanes, aromatic hydrocarbons and ethers.

### BENEFITS (relative to TPP)

Dicyclohexylphenylphosphine is a more sterically demanding ligand with higher basicity.

### RECOMMENDED USES

Dicyclohexylphenylphosphine has a low N to I Ratio for hydroformylation.

Dicyclohexylphenylphosphine can be used for epoxy cure, it minimizes formation of unsaturation.

Please see applications table for a more complete list of recommended uses.

### PACKAGING

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### OTHER LIGANDS

Ligand	q <sup>a</sup>	pK <sub>a</sub> <sup>b</sup>
Triphenylphosphine	145	2.73
Diphenylcyclohexylphosphine	153	5.05
Dicyclohexylphenylphosphine	161	7.38
Tricyclohexylphosphine	170	9.70
Tribenzylphosphine	165	6.00
Tri- <i>o</i> -tolylphosphine	194	3.08
Tri- <i>p</i> -tolylphosphine	145	3.84

<sup>a</sup> Cone angle data taken from references (1) and (2)

<sup>b</sup> pK<sub>a</sub> data taken from references (1), (3), (4), (5), (6)

### REFERENCES- Other Ligands

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- (3) Simal, F.; Demonceau, A.; Noels, A.F. *Angew. Chem. Int. Ed.* **1999**, 38, 538-40.
- (4) Henderson, W.A.; Streuli, C.A. *J. AM. Chem. Soc.* **1960**, 82, 5791-94.
- (5) Allman, T.; Goel, R.G. *Can. J. Chem.* **1982**, 60, 716-22.
- (6) Jackson, R.A.; Kanluen, R.; Poe, A. *Inorg. Chem.* **1984**, 23, 523-27.

## APPLICATIONS

General Area	Reaction / Application	Remarks
Catalysis	Hyrodimerization	Nickel complex catalyzed dimerization of butadiene to octadiene. (1)
	Dimerization	Formation of methyleneglutaronitrile from acrylonitrile. (2) Dimethylbutene and methylpentene synthesis from propylene. (3), (4)
	Hydrogenation	Iridium complex catalyzed reduction of olefins. (5), (6)
	Hydroformylation	Rhodium complex catalyzed conversion of propylene to butyraldehyde. (7),(8)
	Curing Catalyst	Polymerization reactions, including epoxy resin curing and photopolymerization.
Additives	Flame Retardant	For polyolefins, polyamides and polystyrene. (9)

### REFERENCES- Applications

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| (1) Europatent Appl. 4,409 (1979).                               | (5) R. Bonnaire, et al., J. Organomet. Chem., <b>161</b> , C41 (1978). |
| (2) Netherlands Patent Appl. 6,602,495 (1966).                   | (6) A.J. Naaktgeboren, et al., J. Mol. Catal., <b>11</b> , 343 (1981). |
| (3) M. Uchino, C.R. Acad. Sci. Ser. C., <b>265</b> , 103 (1967). | (7) Europatent Appl. 28,378 (1981).                                    |
| (4) French Patent 1,549,202 (1968).                              | (8) US Patent 4945185A (1990).   |
|  | (9) German Offen., 1,933,396 (1970).                                   |

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