

ALFAA42120

## (S)-(-)-2,2'-Bis(di-p-tolylphosphino)-1,1'-binaphthyl

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

产品说明: (S)-(+)-2,2'-双(二-4-甲基苯基膦)-1,1'-联萘  
Product Description: (S)-(-)-2,2'-Bis(di-p-tolylphosphino)-1,1'-binaphthyl

Cat No. : 42120  
Synonyms (S)-Tol-BINAP  
CAS No 100165-88-6  
Molecular Formula C48 H40 P2

Supplier Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
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E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.  
Uses advised against No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Powder Solid

**Appearance**  
White

**Odor**  
No information available

#### Emergency Overview

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

#### Classification of the substance or mixture

|  |            |
|--|------------|
| Skin Corrosion/Irritation                          | Category 2 |
| Serious Eye Damage/Eye Irritation                  | Category 2 |
| Specific target organ toxicity - (single exposure) | Category 3 |

#### Label Elements



Signal Word

Warning

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### Hazard Statements

H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation

### Precautionary Statements

#### Prevention

P271 - Use only outdoors or in a well-ventilated area  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

#### Response

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P362 + P364 - Take off contaminated clothing and wash it before reuse

#### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

#### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

### Physical and Chemical Hazards

None identified.

### Health Hazards

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

### Environmental hazards

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Is not likely mobile in the environment due its low water solubility. Spillage unlikely to penetrate soil.

This product does not contain any known or suspected endocrine disruptors.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component   | CAS No      | Weight % |
|---|-------------|----------|
| (S)-(-)-2,2'-Bis(di-p-tolylphosphino)-1,1'-binaphthyl | 100165-88-6 | <=100    |

## SECTION 4. FIRST AID MEASURES

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

### Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

### Inhalation

Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

### Ingestion

Clean mouth with water. Get medical attention.

### Most important symptoms and effects

No information available.

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**  
Treat symptomatically.

## SECTION 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

### Extinguishing media which must not be used for safety reasons

No information available.

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Ensure adequate ventilation.

### Environmental Precautions

See Section 12 for additional Ecological Information.

### Methods for Containment and Clean Up

Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment.

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7. HANDLING AND STORAGE

### Handling

Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.

### Storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

### Specific Use(s)

Use in laboratories

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

### Exposure Controls

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the

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workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time                 | Glove thickness | EU standard | Glove comments        |
|----------------|-----------------------------------|-----------------|-------------|-----------------------|
| Nitrile rubber | See manufacturers recommendations | -               | EN 374      | (minimum requirement) |
| Neoprene       |                                   |                 |             |                       |
| Natural rubber |                                   |                 |             |                       |
| PVC            |                                   |                 |             |                       |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection** No protective equipment is needed under normal use conditions.

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

**Small scale/Laboratory use** Maintain adequate ventilation

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|  |                               |  |
|--|-------------------------------|--|
| <b>Appearance</b>                              | White                         |  |
| <b>Physical State</b>                          | Powder Solid                  |  |
| <b>Odor</b>                                    | No information available      |  |
| <b>Odor Threshold</b>                          | No data available             |  |
| <b>pH</b>                                      | No information available      |  |
| <b>Melting Point/Range</b>                     | 255 - 257 °C / 491 - 494.6 °F |  |
| <b>Softening Point</b>                         | No data available             |  |
| <b>Boiling Point/Range</b>                     | No information available      |  |
| <b>Flash Point</b>                             | No information available      | <b>Method -</b> No information available |
| <b>Evaporation Rate</b>                        | Not applicable                | Solid                                    |
| <b>Flammability (solid,gas)</b>                | No information available      |  |
| <b>Explosion Limits</b>                        | No data available             |  |
| <b>Vapor Pressure</b>                          | No data available             |  |
| <b>Vapor Density</b>                           | Not applicable                | Solid                                    |
| <b>Specific Gravity / Density</b>              | No data available             |  |
| <b>Bulk Density</b>                            | No data available             |  |
| <b>Water Solubility</b>                        | Insoluble                     |  |
| <b>Solubility in other solvents</b>            | No information available      |  |
| <b>Partition Coefficient (n-octanol/water)</b> |                               |  |

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|                                  |                          |       |
|----------------------------------|--------------------------|-------|
| <b>Autoignition Temperature</b>  | No data available        |       |
| <b>Decomposition Temperature</b> | No data available        |       |
| <b>Viscosity</b>                 | Not applicable           | Solid |
| <b>Explosive Properties</b>      | No information available |       |
| <b>Oxidizing Properties</b>      | No information available |       |

|                          |            |
|--------------------------|------------|
| <b>Molecular Formula</b> | C48 H40 P2 |
| <b>Molecular Weight</b>  | 678.79     |

## SECTION 10. STABILITY AND REACTIVITY

|                                 |  |
|---------------------------------|--|
| <b>Stability</b>                | Stable under normal conditions.          |
| <b>Hazardous Reactions</b>      | No information available.                |
| <b>Hazardous Polymerization</b> | Hazardous polymerization does not occur. |
| <b>Conditions to Avoid</b>      | Incompatible products.                   |
| <b>Materials to avoid</b>       | Strong oxidizing agents.                 |

**Hazardous Decomposition Products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Oxides of phosphorus.

## SECTION 11. TOXICOLOGICAL INFORMATION

|   |   |
|---|---|
| <b>Product Information</b>                    | No acute toxicity information is available for this product |
| <b>(a) acute toxicity;</b>                    |   |
| <b>(b) skin corrosion/irritation;</b>         | Category 2  |
| <b>(c) serious eye damage/irritation;</b>     | Category 2  |
| <b>(d) respiratory or skin sensitization;</b> |   |
| <b>Respiratory</b>                            | No data available   |
| <b>Skin</b>                                   | No data available   |
| <b>(e) germ cell mutagenicity;</b>            | No data available   |
| <b>(f) carcinogenicity;</b>                   | No data available   |
|   | There are no known carcinogenic chemicals in this product   |
| <b>(g) reproductive toxicity;</b>             | No data available   |
| <b>(h) STOT-single exposure;</b>              | Category 3  |
| <b>Results / Target organs</b>                | Respiratory system  |
| <b>(i) STOT-repeated exposure;</b>            | No data available   |
| <b>Target Organs</b>                          | No information available.                                   |
| <b>(j) aspiration hazard;</b>                 | Not applicable  |

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Solid

**Other Adverse Effects**                      The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed**      No information available

### SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects**                                      Do not empty into drains.

**Persistence and Degradability**  
**Persistence**    Insoluble in water.

**Bioaccumulative Potential**                      May have some potential to bioaccumulate

**Mobility in soil**                                      Spillage unlikely to penetrate soil    Is not likely mobile in the environment due its low water solubility

**Endocrine Disruptor Information**              This product does not contain any known or suspected endocrine disruptors  
**Persistent Organic Pollutant**                      This product does not contain any known or suspected substance  
**Ozone Depletion Potential**                      This product does not contain any known or suspected substance

### SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products**                      Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging**                              Dispose of this container to hazardous or special waste collection point.

**Other Information**                                      Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

### SECTION 14. TRANSPORT INFORMATION

#### Road and Rail Transport

|                             |                              |
|-----------------------------|------------------------------|
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |
| <b>Packing Group</b>        | III                          |

#### IMDG/IMO

|                             |                              |
|-----------------------------|------------------------------|
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |
| <b>Packing Group</b>        | III                          |

#### IATA

|                             |                              |
|-----------------------------|------------------------------|
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |

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**Packing Group** III

**Special Precautions for User** No special precautions required

## SECTION 15. REGULATORY INFORMATION

### International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

| Component   | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | TCSI | IECSC | EINECS | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL |
|---|---|---|------|-------|--------|------|-----|-------|------|------|------|------|
| (S)-(-)-2,2'-Bis(di-p-tolylphosphino)-1,1'-binaphthyl | -   | -                                       | X    | -     | -      | -    | -   | -     | -    | X    | -    | -    |

### National Regulations

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 22-Apr-2024  
**Revision Summary** New emergency telephone response service provider.

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**PNEC** - Predicted No Effect Concentration

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**OECD** - Organisation for Economic Co-operation and Development

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

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**BCF** - Bioconcentration factor

**VOC** - (Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

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**End of Safety Data Sheet**