SAFETY DATA SHEET

Oakwood Products, Inc
730 Columbia HWY N
Estill, SC 29918
www.oakwoodchemical.com

Phone Numbers:
Product Information 803-739-8800
Transportation Emergency 800-451-8346
Outside the USA 760-602-8700

MATERIAL IDENTIFICATION

NAME: R-(+)-1,1'-Bi-2-naphthol
CAS#: [18531-94-7]
CAT#: 023262
For R&D use only.

HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity, oral (Category 3)
Serious eye damage/eye irritation (Category 2A)

GHS Label elements, including precautionary statements

Pictograms

Signal Word  Danger
Hazard Statement(s)
H301  Toxic if swallowed
H319  Causes serious eye irritation

Precautionary Statement(s)
P262  Do not get in eyes, on skin, or on clothing.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310  IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304 + P340  IF INHALED: Remove victim to fresh air and Keep at rest in a position 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.
P310  Immediately call a POISON CENTER or doctor/physician.
P337 + P313  IF eye irritation persists: Get medical advice/attention.
COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : (+)-2,2'-Dihydroxy-1,1'-dinaphthyl, (R)-(＋)-1,1'-Bi(2-naphthol), (R)-BINOL
Formula : C20H14O2
Molecular Weight : 286.33 g/mol

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>18531-94-7</td>
<td>R-(＋)-1,1'-Bi-2-naphthol</td>
<td>99%</td>
</tr>
</tbody>
</table>

FIRST AID MEASURES

In case of eye contact
Immediately flush eyes with running water for at least 15 minutes while keeping eyes open. Seek medical attention.

In case of skin contact
Wash thoroughly with soap and plenty of water. Seek medical attention.

If inhaled
Remove victim from source of exposure to fresh air. If breathing is difficult, administer oxygen. Seek medical attention.

If swallowed
Do not induce vomiting. Give water to victim to drink. Seek medical attention.

FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use carbon dioxide, dry chemical powder, alcohol-resistant or polymer foam.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosion hazards/decomposition of product
emits toxic fumes under fire conditions.

ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing fumes, vapors, mists or gas. Ventilate area. Remove all sources of ignition. Evacuate personnel.

Environmental precautions
Prevent further leakage if safe to do so.

Methods and materials for containment and clean up
Absorb spills on sand or vermiculite and place in closed container for disposal.

HANDLING AND STORAGE
Precautions for safe handling
Avoid prolonged use. Avoid all direct contact with material. Do not breathe dust or vapor. Wash thoroughly after handling.

Precautions for safe storage
Keep container tightly closed. Store in a cool, dry, well-ventilated area.

EXPOSURE CONTROL/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Eye/face protection
Wear protective safety goggles or face shields tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Hand/skin protection
Avoid all direct contact with product.
Wear chemical-resistant gloves.
Wear protective clothing and boots.
After contact with skin, wash immediately.

Respiratory protection
Ensure adequate ventilation during use. Approved respiratory equipment must be used when airborne concentrations are unknown or exceed the exposure limits.

PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>white solid</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/Freezing Point</td>
<td>208-210°C</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper/Lower Flammability or Explosive limits</td>
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<tr>
<td>Vapour pressure</td>
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<tr>
<td>Relative Density</td>
<td>no data available</td>
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<tr>
<td>Solubility(ies)</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
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<tr>
<td>Auto-ignition temperature</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>Refractive Index</td>
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</tbody>
</table>

STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**Conditions to avoid**
no data available

**Incompatible materials**
Strong oxidizing agents.

**Hazardous decomposition products**
May evolve carbon monoxide and carbon dioxide.

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**TOXICOLOGICAL INFORMATION**

**Acute toxicity**

**Oral LD50**
Rat - 113 mg/kg
Behavioral: Tremor. Convulsions or effect on seizure threshold. Nutritional and gross metabolic: Weight loss or decreased weight gain.

**Skin corrosion/irritation**
Rabbit - Moderate eye irritation.

**Serious eye damage/eye irritation**
Causes serious eye irritation

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**
no data available

**Reproductive toxicity**
no data available

**STOT-single exposure**
no data available

**STOT-repeated exposure**
no data available

**Aspiration hazard**
no data available

**Exposure Routes**
Harmful to skin, eyes, and respiratory system. May be toxic if inhaled or swallowed.

**Additional Information**
RTECS: DU3106100
ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

DISPOSAL CONSIDERATIONS

Dissolve in or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Federal, State and local laws.

TRANSPORT INFORMATION

DOT
Toxic solids, organic, n.o.s.
6.1
UN2811 III

IMDG
Toxic solid, organic, n.o.s.
6.1
UN2811 III
EMS-No: F-A, S-A
Marine Pollutant: No

IATA
Toxic solid, organic, n.o.s.
6.1
UN2811 III

REGULATORY INFORMATION

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: No chemicals in this material are subject to the reporting requirements of SARA Title III,
**New Jersey Right to Know Components**
This product may contain a chemical on the New Jersey Right to Know Components List.

- **R-(+)-1,1'-Bi-2-naphthol**
  - CAS: 18531-94-7

**California Prop. 65 Components**
This product does not contain a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

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**OTHER INFORMATION**

*Version : 1.2*

*Revision Date : 6/15/2017*

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. Oakwood shall not be held liable for any damage resulting from handling or from contact with the above product.