

# MATERIAL SAFETY DATA SHEET

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : **(R)-(+)-4-Hydroxy-2-pyrrolidinone**  
Product Number : 6351  
CAS-No. : 22677-21-0

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Capot Chemical Co.,Ltd.  
Joinhands Science Park, No.4028 Nanhuan Road  
Hangzhou, Zhejiang, China 310053  
Telephone : 0086-571-85586718  
Fax : 0086-571-85864795  
E-mail address : [sales@capotchem.com](mailto:sales@capotchem.com)

### 1.4 Emergency telephone number

Emergency Phone # : 0086-571-85586718

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008**

Skin irritation (Category 2), H315

Serious eye irritation (Category 2A), H319

Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

R36;R37;R38

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008**

Pictogram



GHS07

Signal word

Warning

Hazard statement(s)

H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation  
Precautionary statement(s)  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Supplemental Hazard Statements None

## 2.3 Other hazards

None

# SECTION 3: Composition/information on ingredients

## 3.1 Substances

Synonyms : (R)- $\beta$ -Hydroxy- $\gamma$ -butyrolactam  
Formula : C<sub>4</sub>H<sub>7</sub>NO<sub>2</sub>  
Molecular Weight : 101.10 g/mol  
CAS-No. : 22677-21-0  
EC-No. :

### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
<b>(R)-(+)-4-Hydroxy-2-pyrrolidinone</b>			
CAS-No.	22677-21-0	H315-H319-H335	<= 100 %
EC-No.			

### Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
<b>(R)-(+)-4-Hydroxy-2-pyrrolidinone</b>			
CAS-No.	22677-21-0	R36;R37;R38	<= 100 %
EC-No.			

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

# SECTION 4: First aid measures

## 4.1 Description of first aid measures

### General advice

Consult a physician. Show this safety data sheet to the doctor in attendanc.

### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a

physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and /or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

no data available

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**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

carbon dioxide,nitrogen oxides (NOx),Hydrogen chloride gas

**5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

no data available

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**SECTION 6: Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

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

Store under inert gas. Hygroscopic.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection**

## 8.1 Control parameters

### Components with workplace control parameters

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Body Protection

impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges.

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Not available
pH	Not available
Melting point	156-159°C
Boiling point	Not available
Autoignition Temperature	Not available
Flash Point	Not available
Explosion Limits: Lower	Not available
Explosion Limits: Upper	Not available
Decomposition Temperature	Not available
Solubility in water	Not available
Specific Gravity/Density	Not available

### 9.2 Other safety information

no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

## **10.2 Chemical stability**

Stable under recommended storage conditions.

## **10.3 Possibility of hazardous reactions**

no data available

## **10.4 Conditions to avoid**

Avoid moisture.

## **10.5 Incompatible materials**

acids, Acid chlorides, Acid anhydrides, Oxidizing agents

## **10.6 Hazardous decomposition products**

Other decomposition products - no data available

In the event of fire: see section 5

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# **SECTION 11: Toxicological information**

## **11.1 Information on toxicological effects**

### **Acute toxicity**

no data available

### **Skin corrosion/irritation**

no data available

### **Serious eye damage/eye irritation**

no data available

### **Respiratory or skin sensitisation**

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

IARC : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

### **Reproductive toxicity**

no data available

### **Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

### **Specific target organ toxicity - repeated exposure**

no data available

### **Aspiration hazard**

no data available

### **Additional Information**

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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# **SECTION 12: Ecological information**

## **12.1 Toxicity**

no data available

## **12.2 Persistence and degradability**

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and nonrecyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

#### DOT (US)

Not dangerous goods

#### IMDG

Not dangerous goods

#### IATA

Not dangerous goods

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## SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

#### Full text of H-Statements referred to under sections 2 and 3.

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

#### Full text of R-phrases referred to under sections 2 and 3.

R36 Irritating to the eyes

R37 Irritating to the respiratory system

R38 Irritating to the skin

#### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our

knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Capot Chemical Co., Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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(R)-(+)-4-Hydroxy-2-pyrrolidinone SAFETY DATA SHEET

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