

# MATERIAL SAFETY DATA SHEET



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

### 1.1 Product identifiers

**Product name** : [R-\(+\)-Limonene](#)  
**Catalogue number** : 5082 S  
**CAS NUMBER** : 5989-27-5      **EC Number** : 227-813-5

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

Reagent for research use only.

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

Extrasynthese  
Z.I Lyon Nord  
Impasse Jacquard - C.S 30062  
69727 GENAY CEDEX - FRANCE  
Phone : (33)(0)478-98-20-34  
Fax : (33)(0)478-98-19-45  
info@extrasynthese.com

### 1.4 Emergency call number (I.N.R.S France) : Tel :

(33)(0)145-42-59-59

## 2 . HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### According to Regulation (EC) No 1272/2008

Hazardous to the aquatic environment (Category 1) ; H400  
Hazardous to the aquatic environment (Category 1) ; H410  
Flammable Liquids (Category 3) ; H226  
Skin Irritation (Category 2) ; H315  
Skin Sensitisation (Category 1) ; H317

### 2.2 Label elements

#### Labelling according Regulation (CE) No 1272/2008

##### Pictogram

Warning



SGH07    SGH09    SGH02

##### Hazard statement

H400      Very toxic to aquatic life  
H410      Very toxic to aquatic life with long lasting effects  
H226      Flammable liquid and vapour  
H315      Causes skin irritation  
H317      May cause an allergic skin reaction

##### Precautionary statements

P260      Do not breathe dust/fume/gas/mist/vapours/spray.  
P280      Wear protective gloves/protective clothing/eye protection/face protection.  
P262      Do not get in eyes, on skin, or on clothing.  
P210      Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P273      Avoid release to the environment.

##### Supplemental hazard statements

No additional information.

### 2.3 Other hazards

R-(+)-Limonene

None

### 3 . COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.1 Substances

**Product name** : R-(+)-Limonene  
**Empirical formula** : C<sub>10</sub>H<sub>16</sub>  
**CAS NUMBER** : 5989-27-5  
**Synonyms** : -  
**EC Number** : 227-813-5

R-(+)-Limonene		
CAS NUMBER	Concentration	Classification
5989-27-5	< 100%	Skin Sens. 1 (H317) ; Flam. Liq. 3 (H226) ; Aquatic chronic 1 (H410) ; Skin Irrit. 2 (H315) ; Aquatic Acute 1 (H400)

For the full text of the H-statements mentioned in this section, see section 16.

#### 3.2 Mixtures

Not applicable

### 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 attendance.

##### Inhalation

In case of inhalation, move the victim to fresh air. If breathing is difficult, put the victim on oxygen. If breathing stops, carry out artificial respiration.

##### In case of skin contact

Wash thoroughly with water and soap.

##### In case of eye contact

Rinse well with plenty of water for at least 15 minutes.

##### Ingestion

Do not make an unconscious person vomit or swallow anything. Rinse the mouth thoroughly with water.

#### 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.

### 5 . FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

Carbon dioxide, dry powder.

#### 5.2 Special hazards arising from the substance

Harmful/toxic vapours, carbon oxides may be released during the fire.

#### 5.3 Advise for fire-fighters

Wear an autonomous breathing apparatus and suitable protection clothing against chemical agents.

### 6 . ACCIDENTAL RELEASE MEASURES

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

Use personal protective equipment. Evacuate the personnel from the contaminated zone. Ensure adequate ventilation.

#### 6.2 Environmental precautions

Keeping away from drains, surface and ground waters.

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

Clean up without creating dust and place in adapted and sealed containers for elimination. Wash the contaminated area with water and soap. Confine washing water and dispose of it complying with the local regulations. After cleaning, quickly eliminate traces of water with a product absorbing liquids (for example : sand, sawdust, universal binder, Kieselguhr).

#### 6.4 Reference to other sections

For disposal see section 13.

## 7 . HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid formation of dust. Avoid contact with skin and eyes. During handling, wear suitable personal protective equipment (see section 8). Follow the normal measures for preventive fire protection.

### 7.2 Specific handling

No data available.

### 7.3 Conditions for safe storage, including any incompatibilities

Store in a cool well-ventilated place.  
Keep container tightly closed in a dry place away from light.  
Store at <+8°C

### 7.4 Specific end use(s)

No data available

## 8 . EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

### 8.2 Exposure controls

#### Respiratory protection

Wear imperatively an appropriated mask/respirator, tested and approved by standards such as NIOSH (US) or CEN (EU).

#### Hand protection

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

#### Eye protection

Wear safety glasses.

#### Skin protection

Wear suitable protective clothing according to the quantity and the level of activity of the substance at the workplace.

## 9 . PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a	Physical state	: Liquid
b	Odour	: No data available
c	Odour threshold	: No data available
d	pH	: No data available
e	Melting point/freezing point	: No data available
f	Initial boiling point/boiling range	: 175 - 177°C
g	Flash point	: 48°C
h	Evaporation rate	: No data available
i	Flammability (solid, gas)	: No data available
j	Upper /Lower flammability or explosive limits	: No data available
k	Vapour pressure	: No data available
l	Vapour density	: No data available
m	Relative density	: No data available
n	Solubility	: Ethyl alcohol (Soluble)
o	Partition coefficient: n-octanol/water	: No data available
p	Auto-ignition temperature	: No data available

q	Decomposition temperature	: No data available
r	Viscosity	: No data available
s	Explosive properties	: No data available
t	Oxidizing properties	: No data available

## 9.2 Other information

No data available

## 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 hazardous reactions during storage and handling complying with the instructions.

### 10.4 Conditions to avoid

No data available.

### 10.5 Incompatible materials

No data available.

### 10.6 Hazardous decomposition products

No hazardous decomposition products if the instructions for handling and storage are respected. During high overheating of the substance or during a fire, hazardous decomposition products may be produced.

## 11 . TOXICOLOGICAL INFORMATION

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute oral toxicity

No data available.

#### Acute dermal toxicity

No data available.

#### Acute inhalation toxicity

No data available.

#### Skin Corrosion

No data available.

#### Skin Irritation

No data available.

#### Serious Eye Damage

No data available.

#### Eye Irritation

No data available.

#### Respiratory Sensitisation

No data available.

#### Skin Sensitisation

No data available.

#### Germ Cell Mutagenicity

No data available.

#### Carcinogenicity

No data available.

#### Reproductive Toxicity

No data available.

#### Specific Target Organ Toxicity - Single Exposure

No data available.

#### Specific Target Organ Toxicity - Repeated Exposure

No data available.

#### Aspiration Hazard

No data available.

#### 11.2 Information on other hazards

No data available.

### 12 . ECOLOGICAL INFORMATION

#### 12.1 Toxicity

LC50 - Pimephales promelas - 0,702 mg/l - 96h  
EC50 - Daphnia pulex - 69,6 mg/l - 48h

#### 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

No data available.

#### 12.6 Endocrine disrupting properties

No data available.

#### 12.7 Other adverse effects

No data available.

### 13 . DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

Non-recyclable surplus and solutions must be sent to a licensed professional waste disposal service, while respecting the local statutory instructions. Contaminated packaging is to be eliminated in the same way as the product that is contained.

### 14 . TRANSPORT INFORMATION

#### 14.1 UN number or ID number

RID/ADR : 2052  
IATA : 2052

#### 14.2 UN proper shipping name

IATA : UN2052=Dipentene  
RID/ADR : UN2052=Dipentene

#### 14.3 Transport hazard classes

IATA : 3  
RID/ADR : 3

#### 14.4 Packing group

IATA : 3  
RID/ADR : 3

#### 14.5 Environmental hazards

Yes

#### 14.6 Special precautions for user

There is no additional information.

#### 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

### 15 . REGULATORY INFORMATION

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

Directive 96/82/CE (SEVESO category/named substances) : not applicable.  
Regulation CE 2037/2000 (substances that deplete the ozone layer) : not applicable.  
Regulation 850/2004 (persistent organic pollutants) : not applicable.  
Regulation REACH-Titre VII (authorisations) et Titre VIII (restrictions) : not applicable.

**15.2 Chemical safety assessment**

Not applicable.

**16 . OTHER INFORMATION****Use**

The information contained in this safety data sheet are based on our experience and our current knowledge. The data may in no case be considered as product specifications. It is provided for information purposes only with no obligation on our part. In this respect, we shall not be held liable for the use which is made of our products and for the information given above.

**Abbreviations and acronyms**

ADR: Agreement on Dangerous Goods by Road

RID: Regulations concerning the International Transport of Dangerous Goods by Rail

IATA: International Air Transport Association

CAS: Chemical Abstract Service

PBT: Persistent, Bioaccumulative and Toxic

vPvB: Very Persistent and Very Bioaccumulative

**Full text of R-phrases and S-phrases according to European Directive 67/548/EEC-Full text of hazard statement(s) mentioned in section 3**

**Aquatic Acute** : Hazardous to the aquatic environment

**Aquatic chronic** : Hazardous to the aquatic environment

**Flam. Liq.** : Flammable Liquids

**Skin Irrit.** : Skin Irritation

**Skin Sens.** : Skin Sensitisation

**1** : Category 1

**2** : Category 2

**3** : Category 3

**H226** : Flammable liquid and vapour

**H315** : Causes skin irritation

**H317** : May cause an allergic skin reaction

**H400** : Very toxic to aquatic life

**H410** : Very toxic to aquatic life with long lasting effects