

**D-LIMONENE****0918**  
April 2005CAS No: 5989-27-5  
RTECS No: GW6360000  
UN No: see Notes  
EC No: 601-029-00-7Carvene  
(R)-4-Isopropenyl-1-methylcyclohexene  
(+)-Limonene  
C<sub>10</sub>H<sub>16</sub>  
Molecular mass: 136.23

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Flammable.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
<b>EXPLOSION</b>	Above 48/C explosive vapour/air mixtures may be formed.	Above 48/C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE		STRICT HYGIENE!	
<b>Inhalation</b>		Ventilation.	Fresh air, rest.
<b>Skin</b>	Redness. Pain.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
<b>Eyes</b>	Redness.	Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Personal protection: P1 filter respirator for inert particles. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Xi Symbol N Symbol R: 10-38-43-50/53 S: (2-)24-37-60-61

EMERGENCY RESPONSE	SAFE STORAGE
	Fireproof. Separated from strong oxidants. Store in an area without drain or sewer access.

### IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.

**Chemical dangers**

Reacts violently with a mixture of iodine pentafluoride and tetrafluoroethylene, causing fire and explosion hazard. Reacts with oxidants.

**Occupational exposure limits**

TLV not established.

MAK: 20 ppm, 110 mg/m<sup>3</sup>; sensitization of skin (Sh); Peak limitation category: II(2); Pregnancy risk group: C; (DFG 2005).

**Inhalation risk**

No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20/C.

**Effects of short-term exposure**

The substance is irritating to the skin and is mildly irritating to the eyes.

**Effects of long-term or repeated exposure**

Repeated or prolonged contact may cause skin sensitization (see Notes).

### PHYSICAL PROPERTIES

Boiling point: 178/C

Melting point: -74/C

Relative density (water = 1): 0.84

Solubility in water: at 25 /C very poor

Vapour pressure, kPa at 20/C: 0.19

Relative vapour density (air = 1): 4.7

Flash point: 48/C c.c.

Auto-ignition temperature: 237/C

Octanol/water partition coefficient as log Pow: 4.2

### ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish.

### NOTES

Sensitization may occur with the oxidized substance. This can occur when the pure or diluted substance has been kept for several days. UN 2052 (Transport Emergency Card 30S2052) and UN 2319 (Transport Emergency Card 30GF1-III) with Hazard class 3, Pack group III are used in transport of this substance.

Card has been partly updated in October 2005. See section Occupational Exposure Limits.

### ADDITIONAL INFORMATION

**LEGAL NOTICE**

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information