



# SAFETY DATA SHEET

## 1. Identification

Product identifier	d-Limonene
Other means of identification	None.
Recommended use	Food product; used as a feed component, in non-food applications, cosmetic products; food compatible product used in technical applications and industrial applications.
Recommended restrictions	Uses other than the recommended use.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
Manufacturer	Rio Grande Juice Company
Address	702 E Interstate Hwy 2 Mission, TX 78572 United States of America
Telephone	956-598-6800
Emergency telephone	Global Incident Response Hotline +1 866 519 4752 +1 760 476 3961 Access Code: 14566

## 2. Hazard(s) identification

### Hazards for the product as sold

Physical hazards	Flammable liquids	Category 3
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### Hazards for the product as sold

Health hazards	Skin corrosion/irritation	Category 2
	Sensitization, skin	Category 1
	Aspiration hazard	Category 1

### Hazards for the product as sold

Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

### Hazards for the product as sold

OSHA defined hazards	Not classified.
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### Label elements



Signal word	Danger
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Hazard statement	Flammable liquid and vapor. Causes skin irritation. May cause an allergic skin reaction. May be fatal if swallowed and enters airways. Very toxic to aquatic life with long lasting effects.
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### Precautionary statement

Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist/vapors. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
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<b>Response</b>	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use water fog, alcohol resistant foam, dry chemical powder, carbon dioxide to extinguish. Collect spillage.
<b>Storage</b>	Store in a well-ventilated place. Keep cool. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	No additional hazards are known to be associated with the expected conditions of use at the time of publication. This document does not address hazards that may arise from uses not reasonably anticipated by the manufacturer.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	CAS number	%
d-Limonene	5989-27-5	84 - 98
Myrcene	123-35-3	5 - < 10
Decanal	112-31-2	0.9 - 1.5
Alpha-pinene	80-56-8	0.8 - 1.3

<b>Composition comments</b>	All concentrations are in percent by weight. The exact percentage (concentration) of composition has been withheld as a trade secret.
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### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Most important symptoms/effects, acute and delayed</b>	Aspiration may cause pulmonary edema and pneumonitis. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, hazardous combustion products are released that may include: Carbon oxides.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out. Water runoff can cause environmental damage.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	Flammable liquid and vapor.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

### Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

### Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Persons susceptible to allergic reactions should not handle this product. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
Alpha-pinene (CAS 80-56-8)	TWA	20 ppm

#### US. OARS. Workplace Environmental Exposure Level (WEEL) Guide

Components	Type	Value
d-Limonene (CAS 5989-27-5)	TWA	165.5 mg/m3
		30 ppm

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

### Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles). Face shield is recommended.
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<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
<b>Skin protection</b>	
<b>Other</b>	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Appropriate respirator selection should be made by a qualified professional.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

## 9. Physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid, clear to cloudy, free from foreign matter.
<b>Color</b>	Clear, pale yellow.
<b>Odor</b>	Citrus.
<b>Melting point/freezing point</b>	-140.8 °F (-96 °C)
<b>Boiling point or initial boiling point and boiling range</b>	348.8 - 350.6 °F (176 - 177 °C)
<b>Flammability</b>	Flammable liquid.
<b>Upper/lower flammability or explosive limits</b>	
Explosive limit - lower (%)	0.7
Explosive limit - upper (%)	6.1
<b>Flash point</b>	118.4 °F (48 °C)
<b>Auto-ignition temperature</b>	458.6 °F (237 °C)
<b>Decomposition temperature</b>	Not applicable as the product is not unstable.
<b>pH</b>	Material is non soluble in water.
<b>pH concentration</b>	Material is non soluble in water.
<b>Kinematic viscosity</b>	0.844 mm <sup>2</sup> /s
<b>Kinematic viscosity temp</b>	77 °F (25 °C)
<b>Solubility</b>	
Solubility (water)	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable, product is a mixture.
<b>Vapor pressure</b>	2.4 hPa
<b>Vapor pressure temp.</b>	68 °F (20 °C)
<b>Density and/or relative density</b>	
Density	0.838 - 0.843 g/ml
Relative density	0.838 - 0.843
Relative density temperature	68 °F (20 °C)
<b>Vapor density</b>	Property has not been measured.
<b>Vapor density temp.</b>	Property has not been measured.
<b>Particle characteristics</b>	Not applicable, product is a liquid.

## Other information

<b>Dynamic viscosity</b>	Property has not been measured.
<b>Dynamic viscosity temp</b>	Property has not been measured.
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Inhalation of mist or vapors may cause respiratory tract irritation.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Aspiration may cause pulmonary edema and pneumonitis. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
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### Information on toxicological effects

<b>Acute toxicity</b>	Not expected to be acutely toxic.
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Components	Species	Test Results
d-Limonene (CAS 5989-27-5)		
<b><u>Acute</u></b>		
<b>Dermal</b>		
LD50	Rabbit	> 5000 mg/kg
<b>Oral</b>		
LD50	Rat	4400 mg/kg/day
<b>Other</b>		
NOAEL	Rat	300 mg/kg/day

<b>Skin corrosion/irritation</b>	Causes skin irritation.
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.

### Respiratory or skin sensitization

#### ACGIH sensitization

Turpentine and selected monoterpenes (CAS 80-56-8)      Dermal sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
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<b>Skin sensitization</b>	May cause an allergic skin reaction.
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<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure.
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## IARC Monographs. Overall Evaluation of Carcinogenicity

d-Limonene (CAS 5989-27-5)

3 Not classifiable as to carcinogenicity to humans.

Myrcene (CAS 123-35-3)

2B Possibly carcinogenic to humans.

## NTP Report on Carcinogens

Not listed.

## OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
d-Limonene (CAS 5989-27-5)			
<b>Aquatic</b>			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	0.421 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.702 mg/l, 96 Hours
<i>Chronic</i>			
Algae	NOEC	Green algae (Chlamydomonas variabilis)	4.08 mg/l, 96 Hours
Crustacea	NOEC	Daphnia magna	0.15 mg/l, 21 days

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available on bioaccumulation.

### Partition coefficient n-octanol / water (log Kow)

Alpha-pinene (CAS 80-56-8)	4.83
Decanal (CAS 112-31-2)	3.76
Myrcene (CAS 123-35-3)	4.33
d-Limonene (CAS 5989-27-5)	4.232

**Mobility in soil** No data available for this product.

**Other adverse effects** The product contains a volatile organic compound which has a photochemical ozone creation potential.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

### DOT

UN number	UN2319
UN proper shipping name	Terpene hydrocarbons, n.o.s. (d-Limonene)
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B1, IB3, T4, TP1, TP29
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

### IATA

UN number	UN2319
UN proper shipping name	Terpene hydrocarbons, n.o.s. (d-Limonene)
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Label(s)	3
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

### IMDG

UN number	UN2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (d-Limonene)
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Not established.

### IMO instruments

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Alpha-pinene (CAS 80-56-8) Listed

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

<b>SARA 311/312 Hazardous chemical</b>	Yes
<b>Classified hazard categories</b>	Flammable (gases, aerosols, liquids, or solids) Skin corrosion or irritation Respiratory or skin sensitization Aspiration hazard

**SARA 313 (TRI reporting)**  
Not regulated.

#### Other federal regulations

##### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

##### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

#### US state regulations

##### US. Massachusetts RTK - Substance List

Alpha-pinene (CAS 80-56-8)

##### US. New Jersey Worker and Community Right-to-Know Act

Alpha-pinene (CAS 80-56-8)

d-Limonene (CAS 5989-27-5)

##### US. Pennsylvania Worker and Community Right-to-Know Law

Alpha-pinene (CAS 80-56-8)

##### US. Rhode Island RTK

Not regulated.

##### California Proposition 65



**WARNING:** This product can expose you to Myrcene, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

##### California Proposition 65 - CRT: Listed date/Carcinogenic substance

Myrcene (CAS 123-35-3)

Listed: March 27, 2015

#### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)  
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 24-July-2025



**Revision date** -

**Version #** 01

**Further information** D - Face Shield, Gloves, Apron

**HMIS® ratings** Health: 3  
Flammability: 2  
Physical hazard: 0  
Personal protection: D

**NFPA ratings**



**Disclaimer**

Rio Grande Juice Company cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.