

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

#### 1.1. Product identifier

Product form : Mixture  
 Product name : Piano Olefins Mixture  
 Product code : SG-2025-02854

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

Use of the substance/mixture : Laboratory chemicals

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

Air Liquide  
 2700 Post Oak Boulevard  
 Houston, TX 77056 - USA  
 T 1-800-819-1704  
[www.us.airliquide.com](http://www.us.airliquide.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flam. Liq. 2	H225
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Muta. 2	H341
Carc. 1B	H350
STOT SE 3	H335
Asp. Tox. 1	H304

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapor  
 H304 - May be fatal if swallowed and enters airways  
 H315 - Causes skin irritation  
 H319 - Causes serious eye irritation  
 H335 - May cause respiratory irritation  
 H341 - Suspected of causing genetic defects  
 H350 - May cause cancer

Precautionary statements (GHS-US) :

P202 - Do not handle until all safety precautions have been read and understood  
 P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/bond container and receiving equipment  
 P241 - Use explosion-proof electrical, lighting, ventilating equipment  
 P242 - Use only non-sparking tools  
 P243 - Take precautionary measures against static discharge  
 P261 - Avoid breathing mist, vapors  
 P264 - Wash hands thoroughly after handling  
 P271 - Use only outdoors or in a well-ventilated area  
 P280 - Wear eye protection, face protection, protective clothing, protective gloves  
 P301+P312 - If swallowed: Call a doctor if you feel unwell  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

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P304+P340 - If inhaled: Remove person to fresh air and keep 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  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P331 - Do NOT induce vomiting  
P381 - Eliminate all ignition sources if safe to do so  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

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Name	Product identifier	%	GHS-US classification
1-Hexene	(CAS No) 592-41-6	9.0795	Flam. Liq. 2, H225 Asp. Tox. 1, H304
1-HEPTENE	(CAS No) 592-76-7	7.72862	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
1-OCTENE	(CAS No) 111-66-0	6.85482	Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1-NONENE	(CAS No) 124-11-8	6.07141	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
CIS-3-HEPTENE	(CAS No) 7642-10-6	5.94084	Flam. Liq. 2, H225 Eye Irrit. 2A, H319
1-Pentene	(CAS No) 109-67-1	5.92075	Flam. Liq. 1, H224 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
CIS-2-HEPTENE	(CAS No) 6443-92-1	5.84041	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
DECENE	(CAS No) 872-05-9	5.16246	Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
CIS-2-HEXENE	(CAS No) 7688-21-3	4.64018	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
4-METHYL-1-PENTENE	(CAS No) 691-37-2	4.07272	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
2-METHYL-2-PENTENE	(CAS No) 625-27-4	3.98232	Flam. Liq. 2, H225 Asp. Tox. 1, H304
trans-2-Heptene	(CAS No) 14686-13-6	3.78647	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
trans-3-Heptene	(CAS No) 14686-14-7	3.74128	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
CIS-2-OCTENE	(CAS No) 7642-04-8	3.4952	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Aquatic Chronic 2, H411
Isoprene	(CAS No) 78-79-5	3.47009	Flam. Liq. 1, H224 Muta. 2, H341 Carc. 1B, H350 Aquatic Chronic 2, H411
cis-3-Nonene	(CAS No) 20237-46-1	3.17883	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
cis-2-Pentene	(CAS No) 627-20-3	2.84236	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
Methyl 3- butene 1	(CAS No) 563-45-1	2.83232	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304

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Name	Product identifier	%	GHS-US classification
trans-2-Pentene	(CAS No) 646-04-8	2.59629	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
cis-2-Nonene	(CAS No) 6434-77-1	2.16944	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
trans-2-Hexene	(CAS No) 4050-45-7	2.07904	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
trans-2-Octene	(CAS No) 13389-42-9	1.75765	Flam. Liq. 2, H225 Asp. Tox. 1, H304
trans-3-Nonene	(CAS No) 20063-92-7	1.46638	Flam. Liq. 3, H226
trans-2-Nonene	(CAS No) 6434-78-2	0.78843	Flam. Liq. 3, H226
2-METHYL-1-BUTENE	(CAS No) 563-46-2	0.50219	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Muta. 2, H341 Carc. 2, H351 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Irritation of respiratory tract.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.
- Symptoms/injuries upon intravenous administration : Not known.
- Chronic symptoms : Suspected of causing genetic defects. May cause cancer.

#### 4.3. Indication of any immediate medical attention and special treatment needed

If you feel unwell, seek medical advice. If breathing is difficult, give oxygen.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : This product is flammable.
- Explosion hazard : Product is not explosive. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
- Reactivity : None known.

#### 5.3. Advice for firefighters

- Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

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Protection during firefighting : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

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

General measures : Ensure adequate ventilation.

##### 6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment consistent with the site emergency plan.

Emergency procedures : Escape the danger area by the closest safe route. Close doors and windows of adjacent premises. Keep containers closed. Mark the danger area. Seal off low-lying areas. Keep upwind.

##### 6.1.2. For emergency responders

Protective equipment : Standard protective clothing and equipment (e.g., Self Contained Breathing Apparatus) for fire fighters. Equip cleanup crew with proper protection.

Emergency procedures : Evacuate and limit access. Ventilate area. Remove ignition sources. Monitor concentration of released product. Consider the risk of potentially explosive atmospheres. Wear self-contained breathing apparatus when entering atmospheres of unknown contaminant concentration until proven to be safe.

#### 6.2. Environmental precautions

No additional information available

#### 6.3. Methods and material for containment and cleaning up

For containment : Try to stop release if safe to do so. Contain and collect spillages with non-combustible absorbent materials, e.g. vermiculite & sand.

Methods for cleaning up : Dispose of this material and its container in accordance with local regulations.

#### 6.4. Reference to other sections

See also Sections 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. In use, may form flammable vapor-air mixture.

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Use only non-sparking tools.

Hygiene measures : Do not eat, drink or smoke when using this product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Keep container closed when not in use. Keep cool. Store in well ventilated area. Store locked up.

Incompatible products : None known.

Incompatible materials : Oxidizing materials. Air.

#### 7.3. Specific end use(s)

See Section 1.2.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Piano Olefins Mixture	
ACGIH	Not applicable
OSHA	Not applicable
Methyl 3-butene 1 (563-45-1)	
ACGIH	Not applicable
OSHA	Not applicable

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<b>1-Pentene (109-67-1)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>2-METHYL-1-BUTENE (563-46-2)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>Isoprene (78-79-5)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>trans-2-Pentene (646-04-8)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>cis-2-Pentene (627-20-3)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>4-METHYL-1-PENTENE (691-37-2)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>1-Hexene (592-41-6)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>trans-2-Hexene (4050-45-7)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>2-METHYL-2-PENTENE (625-27-4)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>CIS-2-HEXENE (7688-21-3)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>1-HEPTENE (592-76-7)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>trans-3-Heptene (14686-14-7)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>CIS-3-HEPTENE (7642-10-6)</b>	
ACGIH	Not applicable
OSHA	Not applicable

<b>trans-2-Heptene (14686-13-6)</b>	
ACGIH	Not applicable
OSHA	Not applicable

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<b>CIS-2-HEPTENE (6443-92-1)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>1-OCTENE (111-66-0)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>trans-2-Octene (13389-42-9)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>CIS-2-OCTENE (7642-04-8)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>1-NONENE (124-11-8)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>trans-3-Nonene (20063-92-7)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>cis-3-Nonene (20237-46-1)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>trans-2-Nonene (6434-78-2)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>cis-2-Nonene (6434-77-1)</b>	
ACGIH	Not applicable
OSHA	Not applicable

  

<b>DECENE (872-05-9)</b>	
ACGIH	Not applicable
OSHA	Not applicable

### 8.2. Exposure controls

Appropriate engineering controls	: Ensure exposure is below occupational exposure limits. Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.
Hand protection	: 29 CFR 1910.138: Hand Protection. Wear chemically resistant protective gloves.
Eye protection	: Wear safety glasses with side shields. 29 CFR 1910.133: Eye and Face Protection.
Skin and body protection	: Wear suitable protective clothing, e.g. - lab coats, coveralls or flame resistant clothing.
Respiratory protection	: None necessary during normal and routine operations. See Sections 5 & 6.
Thermal hazard protection	: None necessary during normal and routine operations.
Environmental exposure controls	: Refer to local regulations for restrictions on release of emissions to the atmosphere. For further information refer to section 13.
Other information	: Wear safety shoes while handling containers. 29 CFR 1910.136: Foot Protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
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Appearance	: No data available.
Color	: No data available
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: See Section 2.1 and 2.2
Explosion limits	: No data available
Explosive properties	: Without adequate ventilation formation of explosive mixtures may be possible.
Oxidizing properties	: None.
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Molecular mass	: Not applicable.
Relative gas density	: Heavier than air
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other information

Additional information : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

None known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

vapors may form flammable and explosive mixture with air.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Oxidizing materials. Air.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

1-Pentene (109-67-1)	
LC50 inhalation rat (ppm)	61002.99 ppm/4h
ATE US (gases)	61002.990 ppmV/4h

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<b>2-METHYL-1-BUTENE (563-46-2)</b>	
ATE US (oral)	500.000 mg/kg body weight
<b>Isoprene (78-79-5)</b>	
LD50 dermal rat	> 1 ml/kg
LC50 inhalation rat (mg/l)	180 mg/l/4h
LC50 inhalation rat (ppm)	64597.09 ppm/4h
ATE US (gases)	64597.090 ppmV/4h
ATE US (vapors)	180.000 mg/l/4h
ATE US (dust, mist)	180.000 mg/l/4h
<b>trans-2-Pentene (646-04-8)</b>	
LC50 inhalation rat (ppm)	250000 ppm/4h
<b>cis-2-Pentene (627-20-3)</b>	
LC50 inhalation rat (ppm)	250000 ppm/4h
<b>1-Hexene (592-41-6)</b>	
LC50 inhalation rat (ppm)	32000 ppm/4h

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes serious eye irritation.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Suspected of causing genetic defects.  
Carcinogenicity : May cause cancer.

<b>Isoprene (78-79-5)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity, 3 - Reasonably anticipated to be Human Carcinogen
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified  
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : May be fatal if swallowed and enters airways.  
Symptoms/injuries after inhalation : Irritation of respiratory tract.  
Symptoms/injuries after skin contact : Causes skin irritation.  
Symptoms/injuries after eye contact : Causes serious eye irritation.  
Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

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Symptoms/injuries upon intravenous administration : Not known.  
Chronic symptoms : Suspected of causing genetic defects. May cause cancer.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Isoprene (78-79-5)	
LC50 fish 1	32.5 - 50.15 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 1	140 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 other aquatic organisms 1	> 1000 mg/l (Exposure time: 96 h - Species: Scenedesmus quadricauda)
LC50 fish 2	58.75 - 95.32 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

#### 12.2. Persistence and degradability

Methyl 3- butene 1 (563-45-1)	
Persistence and degradability	No data available.

1-Hexene (592-41-6)	
Persistence and degradability	No data available.

#### 12.3. Bioaccumulative potential

Methyl 3- butene 1 (563-45-1)	
Log Pow	Not known.
Bioaccumulative potential	No data available.

Isoprene (78-79-5)	
BCF fish 1	(no bioaccumulation expected)
Log Pow	3.2 - 4.5 (at 20 °C)

1-Hexene (592-41-6)	
Log Pow	No data available
Log Kow	No data available
Bioaccumulative potential	No data available.

#### 12.4. Mobility in soil

Methyl 3- butene 1 (563-45-1)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

1-Hexene (592-41-6)	
Mobility in soil	No data available.

#### 12.5. Other adverse effects

Effect on ozone layer : No known effects from this product.

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Effect on the global warming : No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Contact supplier if guidance is required. Disposal through controlled incineration or authorized waste dump. Ensure that the emission levels from local regulations or operating permits are not exceeded.

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3295 Hydrocarbons, liquid, n.o.s., 3, II

UN-No.(DOT) : UN3295

Proper Shipping Name (DOT) : Hydrocarbons, liquid, n.o.s.

Transport hazard class(es) (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Special Provisions (49 CFR 172.102) : 144 - If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.  
IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.  
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 C (32 F).  
TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

#### Additional information

Other information : No supplementary information available.

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### ADR

Transport document description : UN 3295 HYDROCARBONS, LIQUID, N.O.S., 3, II, (D/E)  
Packing group (ADR) : II  
Class (ADR) : 3 - Flammable liquid  
Hazard identification number (Kemler No.) : 33  
Classification code (ADR) : F1  
Hazard labels (ADR) : 3 - Flammable liquids



Orange plates : 

Tunnel restriction code (ADR) : D/E  
Limited quantities (ADR) : 11  
Excepted quantities (ADR) : E2

### Transport by sea

UN-No. (IMDG) : 3295  
Proper Shipping Name (IMDG) : Hydrocarbons, Liquid, n.o.s  
Class (IMDG) : 3 - Flammable liquids  
Packing group (IMDG) : II - substances presenting medium danger

### Air transport

UN-No. (IATA) : 3295  
Proper Shipping Name (IATA) : Hydrocarbons, Liquid, n.o.s  
Class (IATA) : 3 - Flammable Liquids  
Packing group (IATA) : II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Methyl 3- butene 1 (563-45-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 1-Pentene (109-67-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### Isoprene (78-79-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting	0.1 %
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### 15.2. International regulations

#### CANADA

#### Methyl 3- butene 1 (563-45-1)

Listed on the Canadian DSL (Domestic Substances List)

#### 1-Pentene (109-67-1)

Listed on the Canadian DSL (Domestic Substances List)

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### Isoprene (78-79-5)

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

#### Methyl 3- butene 1 (563-45-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### 1-Pentene (109-67-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### Isoprene (78-79-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

### National regulations

#### Methyl 3- butene 1 (563-45-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

#### 1-Pentene (109-67-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

#### Isoprene (78-79-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### 15.3. US State regulations

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<b>Isoprene (78-79-5)</b>				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

<b>Methyl 3- butene 1 (563-45-1)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

<b>1-Pentene (109-67-1)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

<b>Isoprene (78-79-5)</b>
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

- Indication of changes : Revised safety data sheet in accordance with OSHA final rule on GHS implementation promulgated March 26, 2012.
- Other information : This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product.

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### Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 1	Flammable liquids Category 1
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Muta. 2	Germ cell mutagenicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

SDS US (GHS HazCom 2012)

*This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of Air Liquide America Corporation's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this product is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.*