

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : 57 Components in Nitrogen  
Product code : SG-2058-02413

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

Use of the substance/mixture : Test gas/Calibration gas.

#### 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

Compressed gas H280  
Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS04

Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H280 - Contains gas under pressure; may explode if heated  
OSHA-H01 - May displace oxygen and cause rapid suffocation  
Precautionary statements (GHS-US) : P202 - Do not handle until all safety precautions have been read and understood  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear eye protection, face protection, protective gloves, protective clothing  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P403 - Store in a well-ventilated place  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations  
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)  
CGA-PG05 - Use a back flow preventive device in the piping  
CGA-PG06 - Close valve after each use and when empty  
CGA-PG10 - Use only with equipment rated for cylinder pressure  
CGA-PG14 - Approach suspected leak area with caution  
CGA-PG21 - Open valve slowly

#### 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

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3.2. Mixture

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Name	Product identifier	%	GHS-US classification
Nitrogen	(CAS No) 7727-37-9	99.943 - 99.9999943	Compressed gas, H280
Acetylene	(CAS No) 74-86-2	0.0000001 - 0.001	Flam. Gas 1, H220 Compressed gas, H280
Benzene	(CAS No) 71-43-2	0.0000001 - 0.001	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304
1-Butene	(CAS No) 106-98-9	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
n-Butane	(CAS No) 106-97-8	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
cis-2-Butene	(CAS No) 590-18-1	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
cis-2-Pentene	(CAS No) 627-20-3	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
Cyclohexane	(CAS No) 110-82-7	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304
Cyclopentane	(CAS No) 287-92-3	0.0000001 - 0.001	Flam. Liq. 2, H225
N-DECANE	(CAS No) 124-18-5	0.0000001 - 0.001	Flam. Liq. 3, H226 Asp. Tox. 1, H304
1,3-DIETHYLBENZENE	(CAS No) 141-93-5	0.0000001 - 0.001	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
3-methyl pentane	(CAS No) 96-14-0	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Ethane	(CAS No) 74-84-0	0.0000001 - 0.001	Flam. Gas 1, H220 Compressed gas, H280
Ethylene	(CAS No) 74-85-1	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280 STOT SE 3, H336
Isobutane	(CAS No) 75-28-5	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
n-Hexane	(CAS No) 110-54-3	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Isoprene	(CAS No) 78-79-5	0.0000001 - 0.001	Flam. Liq. 1, H224 Muta. 2, H341 Carc. 1B, H350 Aquatic Chronic 3, H412
Ethylbenzene	(CAS No) 100-41-4	0.0000001 - 0.001	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation:vapour), H332 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304
n-Heptane	(CAS No) 142-82-5	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS-US classification
1-Hexene	(CAS No) 592-41-6	0.0000001 - 0.001	Flam. Liq. 2, H225 Asp. Tox. 1, H304
Isooctane	(CAS No) 540-84-1	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,4-DIMETHYLPENTANE	(CAS No) 108-08-7	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
DODECANE	(CAS No) 112-40-3	0.0000001 - 0.001	Flam. Liq. 3, H226 Asp. Tox. 1, H304
2,2-Dimethylbutane	(CAS No) 75-83-2	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2-Methylbutane	(CAS No) 78-78-4	0.0000001 - 0.001	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
4-ETHYL TOLUENE	(CAS No) 622-96-8	0.0000001 - 0.001	Flam. Liq. 3, H226 Asp. Tox. 1, H304
P-DIETHYLBENZENE	(CAS No) 105-05-5	0.0000001 - 0.001	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2,3-DIMETHYLBUTANE	(CAS No) 79-29-8	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2,3-DIMETHYLPENTANE	(CAS No) 565-59-3	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1-ETHYL-2-METHYL BENZENE	(CAS No) 611-14-3	0.0000001 - 0.001	Flam. Liq. 3, H226 Eye Irrit. 2A, H319 Repr. 2, H361 Asp. Tox. 1, H304
1-METHYL-3-ETHYL BENZENE	(CAS No) 620-14-4	0.0000001 - 0.001	Flam. Liq. 3, H226 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
ISOPROPYL BENZENE	(CAS No) 98-82-8	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:gas), H332 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2-METHYL HEPTANE	(CAS No) 592-27-8	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2-METHYLHEXANE	(CAS No) 591-76-4	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Propylene	(CAS No) 115-07-1	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
trans-2-Butene	(CAS No) 624-64-6	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280

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Propane	(CAS No) 74-98-6	0.0000001 - 0.001	Flam. Gas 1, H220 Liquefied gas, H280
n-Pentane	(CAS No) 109-66-0	0.0000001 - 0.001	Flam. Liq. 2, H225 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Octane	(CAS No) 111-65-9	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Toluene	(CAS No) 108-88-3	0.0000001 - 0.001	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304
Methylcyclohexane	(CAS No) 108-87-2	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Methylcyclopentane	(CAS No) 96-37-7	0.0000001 - 0.001	Flam. Liq. 2, H225
N-NONANE	(CAS No) 111-84-2	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336
m-xylene	(CAS No) 108-38-3	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315
1-Pentene	(CAS No) 109-67-1	0.0000001 - 0.001	Flam. Liq. 1, H224 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
2-methyl pentane	(CAS No) 107-83-5	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
O-XYLENE	(CAS No) 95-47-6	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315
STYRENE	(CAS No) 100-42-5	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:gas), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 2, H361 STOT RE 1, H372
1,2,4-TRIMETHYLBENZENE	(CAS No) 95-63-6	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:gas), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Chronic 2, H411
PROPYL BENZENE	(CAS No) 103-65-1	0.0000001 - 0.001	Flam. Liq. 3, H226 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
trans-2-Pentene	(CAS No) 646-04-8	0.0000001 - 0.001	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Asp. Tox. 1, H304
p-xylene	(CAS No) 106-42-3	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:gas), H332 Skin Irrit. 2, H315

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1,3,5-TRIMETHYLBENZENE	(CAS No) 108-67-8	0.0000001 - 0.001	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:gas), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 Aquatic Chronic 2, H411
3-METHYLHEPTANE	(CAS No) 589-81-1	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3-METHYL HEXANE	(CAS No) 589-34-4	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,3-TRIMETHYLBENZENE	(CAS No) 526-73-8	0.0000001 - 0.001	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335
2,3,4-TRIMETHYLPENTANE	(CAS No) 565-75-3	0.0000001 - 0.001	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
UNDECANE	(CAS No) 1120-21-4	0.0000001 - 0.001	Flam. Liq. 3, H226 Asp. Tox. 1, H304

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 : Adverse effects not expected from this product.
- First-aid measures after eye contact : Adverse effects not expected from this product.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

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

- Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation.
- Symptoms/injuries after skin contact : Adverse effects not expected from this product.
- Symptoms/injuries after eye contact : Adverse effects not expected from this product.
- Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.
- Symptoms/injuries upon intravenous administration : Not known.
- Chronic symptoms : Adverse effects not expected from this product.

#### 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 : The product is not 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.

#### 6.2. Environmental precautions

Try to stop release if safe to do so.

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

For containment : Try to stop release if safe to do so.  
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 : Pressurized container: Do not pierce or burn, even after use. Use equipment rated for cylinder pressure. Close valve after each use and when empty.  
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.  
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.  
Storage conditions : Do not expose to temperatures exceeding 52°C (125°F). Keep container closed when not in use. Protect cylinder from physical damage. Store in well ventilated area.  
Incompatible products : None known.  
Incompatible materials : None known.

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

See Section 1.2.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

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ACGIH	Not applicable	
OSHA	Not applicable	
Acetylene (74-86-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
Benzene (71-43-2)		
ACGIH	ACGIH TWA (ppm)	0.5 ppm
ACGIH	ACGIH STEL (ppm)	2.5 ppm
OSHA	OSHA PEL (TWA) (ppm)	1 ppm

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Benzene (71-43-2)		
OSHA	OSHA PEL (STEL) (ppm)	5 ppm (see 29 CFR 1910.1028)
OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm
1-Butene (106-98-9)		
ACGIH	ACGIH TWA (ppm)	250 ppm
OSHA	Not applicable	
n-Butane (106-97-8)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
OSHA	Not applicable	
cis-2-Butene (590-18-1)		
ACGIH	ACGIH TWA (ppm)	250 ppm
OSHA	Not applicable	
cis-2-Pentene (627-20-3)		
ACGIH	Not applicable	
OSHA	Not applicable	
Cyclohexane (110-82-7)		
ACGIH	ACGIH TWA (ppm)	100 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1050 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	300 ppm
Cyclopentane (287-92-3)		
ACGIH	ACGIH TWA (ppm)	600 ppm
OSHA	Not applicable	
N-DECANE (124-18-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
1,3-DIETHYLBENZENE (141-93-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
3-methyl pentane (96-14-0)		
ACGIH	Not applicable	
OSHA	Not applicable	
P-DIETHYLBENZENE (105-05-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
2,2-Dimethylbutane (75-83-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
2,3-DIMETHYLBUTANE (79-29-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
2,3-DIMETHYLPENTANE (565-59-3)		
ACGIH	Not applicable	



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2,3-DIMETHYLPENTANE (565-59-3)		
OSHA	Not applicable	
2,4-DIMETHYLPENTANE (108-08-7)		
ACGIH	Not applicable	
OSHA	Not applicable	
DODECANE (112-40-3)		
ACGIH	Not applicable	
OSHA	Not applicable	
1-ETHYL-2-METHYL BENZENE (611-14-3)		
ACGIH	Not applicable	
OSHA	Not applicable	
1-METHYL-3-ETHYL BENZENE (620-14-4)		
ACGIH	Not applicable	
OSHA	Not applicable	
4-ETHYL TOLUENE (622-96-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
Ethane (74-84-0)		
ACGIH	ACGIH TWA (ppm)	1000 ppm
OSHA	Not applicable	
Ethylbenzene (100-41-4)		
ACGIH	ACGIH TWA (ppm)	20 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	435 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	100 ppm
Ethylene (74-85-1)		
ACGIH	ACGIH TWA (ppm)	200 ppm
OSHA	Not applicable	
n-Heptane (142-82-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
1-Hexene (592-41-6)		
ACGIH	Not applicable	
OSHA	Not applicable	
n-Hexane (110-54-3)		
ACGIH	ACGIH TWA (ppm)	50 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Isobutane (75-28-5)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
OSHA	Not applicable	
Isooctane (540-84-1)		
ACGIH	Not applicable	

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Isooctane (540-84-1)		
OSHA	Not applicable	
2-Methylbutane (78-78-4)		
ACGIH	ACGIH TWA (ppm)	600 ppm
OSHA	Not applicable	
Isoprene (78-79-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
ISOPROPYL BENZENE (98-82-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
2-METHYL HEPTANE (592-27-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
2-METHYLHEXANE (591-76-4)		
ACGIH	Not applicable	
OSHA	Not applicable	
2-methyl pentane (107-83-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
3-METHYLHEPTANE (589-81-1)		
ACGIH	Not applicable	
OSHA	Not applicable	
3-METHYL HEXANE (589-34-4)		
ACGIH	Not applicable	
OSHA	Not applicable	
Methylcyclohexane (108-87-2)		
ACGIH	ACGIH TWA (ppm)	400 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	2000 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Methylcyclopentane (96-37-7)		
ACGIH	Not applicable	
OSHA	Not applicable	
N-NONANE (111-84-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
Octane (111-65-9)		
ACGIH	ACGIH TWA (ppm)	300 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	2350 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	500 ppm
1-Pentene (109-67-1)		
ACGIH	Not applicable	

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1-Pentene (109-67-1)		
OSHA	Not applicable	
n-Pentane (109-66-0)		
ACGIH	ACGIH TWA (ppm)	600 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	2950 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Propane (74-98-6)		
ACGIH	ACGIH TWA (ppm)	1000 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
PROPYL BENZENE (103-65-1)		
ACGIH	Not applicable	
OSHA	Not applicable	
Propylene (115-07-1)		
ACGIH	ACGIH TWA (ppm)	500 ppm
OSHA	Not applicable	
STYRENE (100-42-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
Toluene (108-88-3)		
ACGIH	ACGIH TWA (ppm)	20 ppm
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
OSHA	OSHA PEL (Ceiling) (ppm)	300 ppm
trans-2-Butene (624-64-6)		
ACGIH	ACGIH TWA (ppm)	250 ppm
OSHA	Not applicable	
trans-2-Pentene (646-04-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
1,2,3-TRIMETHYLBENZENE (526-73-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
1,2,4-TRIMETHYLBENZENE (95-63-6)		
ACGIH	Not applicable	
OSHA	Not applicable	
1,3,5-TRIMETHYLBENZENE (108-67-8)		
ACGIH	Not applicable	
OSHA	Not applicable	
2,3,4-TRIMETHYLPENTANE (565-75-3)		
ACGIH	Not applicable	
OSHA	Not applicable	

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UNDECANE (1120-21-4)	
ACGIH	Not applicable
OSHA	Not applicable
m-xylene (108-38-3)	
ACGIH	Not applicable
OSHA	Not applicable
O-XYLENE (95-47-6)	
ACGIH	Not applicable
OSHA	Not applicable
p-xylene (106-42-3)	
ACGIH	Not applicable
OSHA	Not applicable
Nitrogen (7727-37-9)	
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. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities.
Hand protection	: Wear working gloves when handling gas containers. 29 CFR 1910.138: Hand Protection.
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 restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.
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	: Gas
Appearance	: Clear, colorless gas.
Color	: Colorless
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	: Not applicable - not flammable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: See Section 2.1 and 2.2
Explosion limits	: Not applicable - not flammable
Explosive properties	: Not applicable - not flammable.
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 for gas-mixtures.

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Relative gas density	: Similar to 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

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

None known.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

None known.

### 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

Acetylene (74-86-2)	
LC50 inhalation rat (ppm)	820000 ppm/4h
Benzene (71-43-2)	
LD50 oral rat	930 mg/kg
LC50 inhalation rat (ppm)	13230 (13050 - 14380) ppm/4h
ATE US (oral)	930.000 mg/kg body weight
ATE US (gases)	13230.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
1-Butene (106-98-9)	
LC50 inhalation rat (ppm)	500000 ppm/4h
n-Butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 g/m <sup>3</sup> (Exposure time: 4 h)
LC50 inhalation rat (ppm)	276789.28 ppm/4h
cis-2-Butene (590-18-1)	
LC50 inhalation rat (ppm)	150307.38 ppm/4h
cis-2-Pentene (627-20-3)	
LC50 inhalation rat (ppm)	250000 ppm/4h
Cyclohexane (110-82-7)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	13.9 mg/l/4h

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<b>Cyclohexane (110-82-7)</b>	
LC50 inhalation rat (ppm)	9500 ppm/4h
<b>N-DECANE (124-18-5)</b>	
LC50 inhalation rat (ppm)	8784.01 ppm/4h
ATE US (gases)	8784.010 ppmV/4h
<b>DODECANE (112-40-3)</b>	
LC50 inhalation rat (ppm)	5000 ppm/4h
ATE US (gases)	5000.000 ppmV/4h
<b>Ethane (74-84-0)</b>	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	820000.000 ppmV/4h
ATE US (vapors)	658.000 mg/l/4h
ATE US (dust, mist)	658.000 mg/l/4h
<b>Ethylbenzene (100-41-4)</b>	
LD50 oral rat	3500 mg/kg
LD50 dermal rabbit	15354 mg/kg
LC50 inhalation rat (mg/l)	17.2 mg/l/4h
LC50 inhalation rat (ppm)	8954.02 ppm/4h
ATE US (oral)	3500.000 mg/kg body weight
ATE US (dermal)	15354.000 mg/kg body weight
ATE US (gases)	8954.020 ppmV/4h
ATE US (vapors)	17.200 mg/l/4h
ATE US (dust, mist)	17.200 mg/l/4h
<b>Ethylene (74-85-1)</b>	
LC50 inhalation rat (ppm)	820000 ppm/4h
ATE US (gases)	820000.000 ppmV/4h
<b>n-Heptane (142-82-5)</b>	
LC50 inhalation rat (ppm)	25126 ppm/4h
<b>1-Hexene (592-41-6)</b>	
LC50 inhalation rat (ppm)	32000 ppm/4h
<b>n-Hexane (110-54-3)</b>	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	48000.000 ppmV/4h
<b>Isobutane (75-28-5)</b>	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	276713.11 ppm/4h
<b>2-Methylbutane (78-78-4)</b>	
LC50 inhalation rat (ppm)	94859.36 ppm/4h
<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 (vapors)	180.000 mg/l/4h
ATE US (dust, mist)	180.000 mg/l/4h
<b>ISOPROPYL BENZENE (98-82-8)</b>	
LC50 inhalation rat (ppm)	7932.36836 ppm/4h
ATE US (gases)	4500.000 ppmV/4h

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<b>N-NONANE (111-84-2)</b>	
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE US (gases)	3200.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
<b>Octane (111-65-9)</b>	
LC50 inhalation rat (mg/l)	118 g/m <sup>3</sup> (Exposure time: 4 h)
LC50 inhalation rat (ppm)	25260 ppm/4h
<b>1-Pentene (109-67-1)</b>	
LC50 inhalation rat (ppm)	61002.99 ppm/4h
ATE US (gases)	61002.990 ppmV/4h
<b>n-Pentane (109-66-0)</b>	
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (mg/l)	364 g/m <sup>3</sup> (Exposure time: 4 h)
LC50 inhalation rat (ppm)	123317.17 ppm/4h
ATE US (dermal)	3000.000 mg/kg body weight
ATE US (gases)	123317.170 ppmV/4h
ATE US (vapors)	364.000 mg/l/4h
ATE US (dust, mist)	364.000 mg/l/4h
<b>Propane (74-98-6)</b>	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	282800 ppm/4h
<b>PROPYL BENZENE (103-65-1)</b>	
LC50 inhalation rat (ppm)	45955 ppm/4h
<b>Propylene (115-07-1)</b>	
LC50 inhalation rat (mg/l)	658 mg/l/4h
LC50 inhalation rat (ppm)	49957.23 ppm/4h
<b>STYRENE (100-42-5)</b>	
LC50 inhalation rat (ppm)	2770.14 ppm/4h
ATE US (gases)	2770.140 ppmV/4h
<b>Toluene (108-88-3)</b>	
LD50 oral rat	636 mg/kg
LD50 dermal rabbit	8390 mg/kg
LC50 inhalation rat (mg/l)	12.5 mg/l/4h
LC50 inhalation rat (ppm)	13001.09 ppm/4h
ATE US (oral)	636.000 mg/kg body weight
ATE US (dermal)	8390.000 mg/kg body weight
ATE US (gases)	13001.090 ppmV/4h
ATE US (vapors)	12.500 mg/l/4h
ATE US (dust, mist)	12.500 mg/l/4h
<b>trans-2-Butene (624-64-6)</b>	
LC50 inhalation rat (ppm)	150307.38 ppm/4h
<b>trans-2-Pentene (646-04-8)</b>	
LC50 inhalation rat (ppm)	250000 ppm/4h
<b>1,2,4-TRIMETHYLBENZENE (95-63-6)</b>	
LC50 inhalation rat (ppm)	3661.09 ppm/4h
ATE US (gases)	3661.090 ppmV/4h
<b>1,3,5-TRIMETHYLBENZENE (108-67-8)</b>	
ATE US (gases)	4500.000 ppmV/4h
<b>m-xylene (108-38-3)</b>	
LC50 inhalation rat (ppm)	4550 ppm/4h
ATE US (dermal)	1100.000 mg/kg body weight

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<b>m-xylene (108-38-3)</b>	
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h

<b>O-XYLENE (95-47-6)</b>	
LC50 inhalation rat (ppm)	4550 ppm/4h
ATE US (dermal)	1100.000 mg/kg body weight
ATE US (gases)	4550.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h

<b>p-xylene (106-42-3)</b>	
ATE US (dermal)	1100.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h

<b>Nitrogen (7727-37-9)</b>	
LC50 inhalation rat (ppm)	820000 ppm/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

<b>Benzene (71-43-2)</b>	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity, 2 - Known Human Carcinogens
In OSHA Hazard Communication Carcinogen list	Yes
In OSHA Specifically Regulated Carcinogen list	Yes

<b>Ethylbenzene (100-41-4)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity
In OSHA Hazard Communication Carcinogen list	Yes

<b>Ethylene (74-85-1)</b>	
IARC group	3 - Not classifiable

<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

<b>Propylene (115-07-1)</b>	
IARC group	3 - Not classifiable

<b>Toluene (108-88-3)</b>	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified



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Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation.

Symptoms/injuries after skin contact : Adverse effects not expected from this product.

Symptoms/injuries after eye contact : Adverse effects not expected from this product.

Symptoms/injuries after ingestion : Ingestion is not considered a potential route of exposure.

Symptoms/injuries upon intravenous administration : Not known.

Chronic symptoms : Adverse effects not expected from this product.

## SECTION 12: Ecological information

### 12.1. Toxicity

Benzene (71-43-2)	
LC50 fish 1	10.7 - 14.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	8.76 - 15.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	29 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
LC50 fish 2	5.3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Cyclohexane (110-82-7)	
LC50 fish 1	3.96 - 5.18 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 other aquatic organisms 1	> 500 mg/l (Exposure time: 72 h - Species: Desmodesmus subspicatus)
LC50 fish 2	23.03 - 42.07 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

Cyclopentane (287-92-3)	
EC50 Daphnia 1	10.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Ethylbenzene (100-41-4)	
LC50 fish 1	11.0 - 18.0 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

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<b>Ethylbenzene (100-41-4)</b>	
EC50 Daphnia 1	1.8 - 2.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 other aquatic organisms 1	4.6 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
LC50 fish 2	4.2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
EC50 other aquatic organisms 2	> 438 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)

<b>n-Hexane (110-54-3)</b>	
LC50 fish 1	2.1 - 2.98 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

<b>2-Methylbutane (78-78-4)</b>	
EC50 Daphnia 1	2.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)

<b>Isoprene (78-79-5)</b>	
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])

<b>Octane (111-65-9)</b>	
EC50 Daphnia 1	0.38 mg/l (Exposure time: 48 h - Species: water flea)

<b>n-Pentane (109-66-0)</b>	
LC50 fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

<b>Toluene (108-88-3)</b>	
LC50 fish 1	15.22 - 19.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	5.46 - 9.83 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	> 433 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)
LC50 fish 2	12.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	11.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 other aquatic organisms 2	12.5 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])

### 12.2. Persistence and degradability

<b>Acetylene (74-86-2)</b>	
Persistence and degradability	Will rapidly degrade by indirect photolysis in air. Will not undergo hydrolysis.

<b>1-Butene (106-98-9)</b>	
Persistence and degradability	Not readily biodegradable.

<b>n-Butane (106-97-8)</b>	
Persistence and degradability	No data available.

<b>cis-2-Butene (590-18-1)</b>	
Persistence and degradability	No data available.

<b>Ethane (74-84-0)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

<b>Ethylene (74-85-1)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

<b>1-Hexene (592-41-6)</b>	
Persistence and degradability	No data available.

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<b>Isobutane (75-28-5)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>2-Methylbutane (78-78-4)</b>	
Persistence and degradability	No data available.

<b>Propane (74-98-6)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>Propylene (115-07-1)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>trans-2-Butene (624-64-6)</b>	
Persistence and degradability	No data available.

<b>Nitrogen (7727-37-9)</b>	
Persistence and degradability	No ecological damage caused by this product.

### 12.3. Bioaccumulative potential

<b>Acetylene (74-86-2)</b>	
Log Pow	0.37
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Benzene (71-43-2)</b>	
BCF fish 1	3.5 - 4.4
Log Pow	1.83
<b>1-Butene (106-98-9)</b>	
Log Pow	2.4
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>n-Butane (106-97-8)</b>	
Log Pow	2.89
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>cis-2-Butene (590-18-1)</b>	
Log Pow	2.33
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Cyclohexane (110-82-7)</b>	
Log Pow	3.44
<b>Cyclopentane (287-92-3)</b>	
Log Pow	2.05
<b>2,2-Dimethylbutane (75-83-2)</b>	
Log Pow	3.8

<b>Ethane (74-84-0)</b>	
Log Pow	1.81
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Ethylbenzene (100-41-4)</b>	
BCF fish 1	15
Log Pow	3.118
<b>Ethylene (74-85-1)</b>	
BCF fish 1	4 - 4.6
Log Pow	1.13

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<b>Ethylene (74-85-1)</b>	
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>1-Hexene (592-41-6)</b>	
Log Pow	No data available
Log Kow	No data available
Bioaccumulative potential	No data available.
<b>Isobutane (75-28-5)</b>	
BCF fish 1	1.57 - 1.97
Log Pow	2.76
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>2-Methylbutane (78-78-4)</b>	
Log Pow	3.2 - 3.3
Log Kow	Not applicable for gas-mixtures.
Bioaccumulative potential	No data available.
<b>Isoprene (78-79-5)</b>	
BCF fish 1	(no bioaccumulation expected)
Log Pow	3.2 - 4.5 (at 20 °C)

<b>Octane (111-65-9)</b>	
Log Pow	5.18
<b>n-Pentane (109-66-0)</b>	
Log Pow	3.39
<b>Propane (74-98-6)</b>	
Log Pow	2.36
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Propylene (115-07-1)</b>	
Log Pow	1.77
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Toluene (108-88-3)</b>	
Log Pow	2.65
<b>trans-2-Butene (624-64-6)</b>	
Log Pow	2.32
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

<b>Nitrogen (7727-37-9)</b>	
Log Pow	Not applicable for inorganic gases.
Bioaccumulative potential	No ecological damage caused by this product.

### 12.4. Mobility in soil

<b>Acetylene (74-86-2)</b>	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>1-Butene (106-98-9)</b>	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>n-Butane (106-97-8)</b>	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>cis-2-Butene (590-18-1)</b>	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

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Ethane (74-84-0)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Ethylene (74-85-1)	
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.
Isobutane (75-28-5)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
2-Methylbutane (78-78-4)	
Mobility in soil	No data available.

Propane (74-98-6)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
Propylene (115-07-1)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
trans-2-Butene (624-64-6)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

Nitrogen (7727-37-9)	
Ecology - soil	No ecological damage caused by this product.

### 12.5. Other adverse effects

Effect on ozone layer	: No known effects from this product.
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. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded.
Waste disposal recommendations	: Refer to the CGA Pamphlet P-63 "Disposal of Gases" available at <a href="http://www.cganet.com">www.cganet.com</a> for more guidance on suitable disposal methods.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT	
Transport document description	: UN1956 Compressed gas, n.o.s.
UN-No.(DOT)	: UN1956
Proper Shipping Name (DOT)	: Compressed gas, n.o.s.
Hazard labels (DOT)	: 2.2 - Non-flammable gas



DOT Packaging Non Bulk (49 CFR 173.xxx)	: 302;305
DOT Packaging Bulk (49 CFR 173.xxx)	: 314;315
DOT Symbols	: G - Identifies PSN requiring a technical name

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DOT Packaging Exceptions (49 CFR 173.xxx) : 306;307  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 75 kg  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

### Additional information

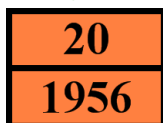
Other information : No supplementary information available.

### ADR

Transport document description : UN 1956, 2.2, (E)  
Class (ADR) : 2 - Gases  
Hazard identification number (Kemler No.) : 20  
Classification code (ADR) : 1A  
Hazard labels (ADR) : 2.2 - Non-flammable compressed gas



Orange plates :



Tunnel restriction code (ADR) : E  
Limited quantities (ADR) : 120ml  
Excepted quantities (ADR) : E1

### Transport by sea

UN-No. (IMDG) : 1956  
Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.  
Class (IMDG) : 2 - Gases

### Air transport

UN-No. (IATA) : 1956  
Proper Shipping Name (IATA) : COMPRESSED GAS, N.O.S.  
Class (IATA) : 2

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Acetylene (74-86-2)

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

#### Benzene (71-43-2)

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 %

#### 1-Butene (106-98-9)

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

#### n-Butane (106-97-8)

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

#### cis-2-Butene (590-18-1)

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

# 57 Components in Nitrogen

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### Cyclohexane (110-82-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
SARA Section 313 - Emission Reporting	1.0 %

### Cyclopentane (287-92-3)

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

### 2,2-Dimethylbutane (75-83-2)

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

### Ethane (74-84-0)

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

### Ethylbenzene (100-41-4)

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 %
---------------------------------------	-------

### Ethylene (74-85-1)

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	1.0 %
---------------------------------------	-------

### n-Hexane (110-54-3)

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	1.0 %
---------------------------------------	-------

### Isobutane (75-28-5)

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

### 2-Methylbutane (78-78-4)

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 %
---------------------------------------	-------

### Methylcyclohexane (108-87-2)

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

### Methylcyclopentane (96-37-7)

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

### Octane (111-65-9)

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

### n-Pentane (109-66-0)

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

EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
--------------------------	--

### Propane (74-98-6)

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

### Propylene (115-07-1)

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	1.0 %
---------------------------------------	-------

# 57 Components in Nitrogen

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### Toluene (108-88-3)

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	1.0 %
---------------------------------------	-------

### trans-2-Butene (624-64-6)

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

### Nitrogen (7727-37-9)

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

## 15.2. International regulations

### CANADA

#### Acetylene (74-86-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class F - Dangerously Reactive Material
----------------------	---

#### Benzene (71-43-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
----------------------	--

#### 1-Butene (106-98-9)

Listed on the Canadian DSL (Domestic Substances List)

#### n-Butane (106-97-8)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
----------------------	--

#### cis-2-Butene (590-18-1)

Listed on the Canadian DSL (Domestic Substances List)

#### Cyclohexane (110-82-7)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
----------------------	--

#### Cyclopentane (287-92-3)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class B Division 2 - Flammable Liquid
----------------------	---------------------------------------

#### 2,2-Dimethylbutane (75-83-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class B Division 2 - Flammable Liquid
----------------------	---------------------------------------

#### Ethane (74-84-0)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas
----------------------	--

#### Ethylbenzene (100-41-4)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects
----------------------	--



# 57 Components in Nitrogen

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### Ethylene (74-85-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

### n-Hexane (110-54-3)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid  
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

### Isobutane (75-28-5)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas

### 2-Methylbutane (78-78-4)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid

### Isoprene (78-79-5)

Listed on the Canadian DSL (Domestic Substances List)

### Methylcyclohexane (108-87-2)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid

### Methylcyclopentane (96-37-7)

Listed on the Canadian DSL (Domestic Substances List)

### Octane (111-65-9)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

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

Listed on the Canadian DSL (Domestic Substances List)

### n-Pentane (109-66-0)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid

### Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas

### Propylene (115-07-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class A - Compressed Gas  
Class B Division 1 - Flammable Gas

### Toluene (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid  
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

### trans-2-Butene (624-64-6)

Listed on the Canadian DSL (Domestic Substances List)

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<b>Nitrogen (7727-37-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class A - Compressed Gas

### EU-Regulations

<b>Acetylene (74-86-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Benzene (71-43-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>1-Butene (106-98-9)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>n-Butane (106-97-8)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>cis-2-Butene (590-18-1)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Cyclohexane (110-82-7)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Cyclopentane (287-92-3)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>2,2-Dimethylbutane (75-83-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Ethane (74-84-0)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Ethylbenzene (100-41-4)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Ethylene (74-85-1)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>n-Hexane (110-54-3)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Isobutane (75-28-5)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>2-Methylbutane (78-78-4)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Isoprene (78-79-5)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Methylcyclohexane (108-87-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Methylcyclopentane (96-37-7)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Octane (111-65-9)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>1-Pentene (109-67-1)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>n-Pentane (109-66-0)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Propane (74-98-6)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

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### Propylene (115-07-1)

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

### Toluene (108-88-3)

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

### trans-2-Butene (624-64-6)

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

### Nitrogen (7727-37-9)

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

#### Acetylene (74-86-2)

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)

#### Benzene (71-43-2)

Listed on IARC (International Agency for Research on Cancer)  
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)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed as carcinogen on NTP (National Toxicology Program)  
Listed on the Canadian IDL (Ingredient Disclosure List)

#### 1-Butene (106-98-9)

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)

#### n-Butane (106-97-8)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

#### cis-2-Butene (590-18-1)

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)

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### Cyclohexane (110-82-7)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### Cyclopentane (287-92-3)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### 2,2-Dimethylbutane (75-83-2)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### Ethane (74-84-0)

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)

### Ethylbenzene (100-41-4)

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)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### Ethylene (74-85-1)

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)

### n-Hexane (110-54-3)

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)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on the Canadian IDL (Ingredient Disclosure List)

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### Isobutane (75-28-5)

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 Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### 2-Methylbutane (78-78-4)

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)

### Methylcyclohexane (108-87-2)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### Methylcyclopentane (96-37-7)

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)

### Octane (111-65-9)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### 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)

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### n-Pentane (109-66-0)

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)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### Propane (74-98-6)

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)

### Propylene (115-07-1)

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)

### Toluene (108-88-3)

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)  
Japanese Poisonous and Deleterious Substances Control Law  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on the Canadian IDL (Ingredient Disclosure List)

### trans-2-Butene (624-64-6)

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)

### Nitrogen (7727-37-9)

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 Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

## 15.3. US State regulations

### Benzene (71-43-2)

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	Yes	No	Yes	6.4 µg/day

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Ethylbenzene (100-41-4)				
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	54 µg/day

Isoprene (78-79-5)				
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	

Toluene (108-88-3)				
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)
No	Yes	Yes	No	

Acetylene (74-86-2)				
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				

Benzene (71-43-2)				
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) - Special Hazardous Substances U.S. - Pennsylvania - RTK (Right to Know) List				

1-Butene (106-98-9)				
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				

n-Butane (106-97-8)				
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				

cis-2-Butene (590-18-1)				
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				

Cyclohexane (110-82-7)				
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				

Cyclopentane (287-92-3)				
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				



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### 2,2-Dimethylbutane (75-83-2)

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

### Ethane (74-84-0)

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

### Ethylbenzene (100-41-4)

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

### Ethylene (74-85-1)

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

### n-Hexane (110-54-3)

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

### Isobutane (75-28-5)

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

### 2-Methylbutane (78-78-4)

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

### Isoprene (78-79-5)

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

### Methylcyclohexane (108-87-2)

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

### Methylcyclopentane (96-37-7)

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

### Octane (111-65-9)

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

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

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



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### **n-Pentane (109-66-0)**

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

### **Propane (74-98-6)**

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

### **Propylene (115-07-1)**

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

### **Toluene (108-88-3)**

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

### **trans-2-Butene (624-64-6)**

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

### **Nitrogen (7727-37-9)**

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

## **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 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
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
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Compressed gas	Gases under pressure Compressed gas
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Gas 1	Flammable gases Category 1
Flam. Liq. 1	Flammable liquids Category 1
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 3	Flammable liquids Category 3
Liquefied gas	Gases under pressure Liquefied gas
Muta. 1B	Germ cell mutagenicity Category 1B
Muta. 2	Germ cell mutagenicity Category 2
Repr. 2	Reproductive toxicity Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H220	Extremely flammable gas
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects (Inhalation)
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
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

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*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.*