

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : LASAL 83  
Product code : SG-2003-02745

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

Use of the substance/mixture : Laser cutting and welding

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

Air Liquide America Specialty Gases  
6141 Easton Rd  
Plumsteadville, PA 18949 - USA  
T 1.800.217.2688  
[www.airliquide.com](http://www.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

##### Classification (GHS-US)

Compressed gas H280

#### 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  
CGA-HG03 - May increase respiration and heart rate

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  
P261 - Avoid breathing gas  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P313 - Get medical advice/attention  
CGA-PG05 - Use a back flow preventive device in the piping  
CGA-PG21 - Open valve slowly  
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-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)  
P403 - Store in a well-ventilated place  
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)

No data available

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

| Name           | Product identifier | %  | Classification (GHS-US)                   |
|----------------|--------------------|----|-------------------------------------------|
| Nitrogen       | (CAS No)7727-37-9  | 55 | Compressed gas, H280                      |
| Helium         | (CAS No)7440-59-7  | 40 | Compressed gas, H280                      |
| Carbon dioxide | (CAS No)124-38-9   | 5  | Simple Asphy, H380<br>Liquefied gas, H280 |

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove 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 : Symptoms similar to those listed under inhalation.

Symptoms/injuries after inhalation : May displace oxygen and cause rapid suffocation. May increase respiration and heart rate. If you feel unwell, seek medical advice.

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.

#### 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.

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.

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### 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.
- 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

| LASAL 83                  |                                     |                        |
|---------------------------|-------------------------------------|------------------------|
| DNEL                      | DNEL                                | ≈                      |
| Carbon dioxide (124-38-9) |                                     |                        |
| USA ACGIH                 | ACGIH TWA (ppm)                     | 5000 ppm               |
| USA ACGIH                 | ACGIH STEL (ppm)                    | 30000 ppm              |
| USA OSHA                  | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 9000 mg/m <sup>3</sup> |
| USA OSHA                  | OSHA PEL (TWA) (ppm)                | 5000 ppm               |

### Nitrogen (7727-37-9)

### Helium (7440-59-7)

### 8.2. Exposure controls

- Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits. 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. 29CFR 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.

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### SECTION 9: Physical and chemical properties

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

|                                             |                                                                                                         |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Physical state                              | : Gas                                                                                                   |
| Appearance                                  | : Clear, colorless gas.                                                                                 |
| Molecular mass                              | : Not applicable for gas-mixtures.                                                                      |
| Color                                       | : Colorless                                                                                             |
| Odor                                        | : odorless                                                                                              |
| Odor threshold                              | : No data available                                                                                     |
| pH                                          | : Not applicable for gas-mixtures.                                                                      |
| Relative evaporation rate (butyl acetate=1) | : No data available                                                                                     |
| Relative evaporation rate (ether=1)         | : Not applicable for gas-mixtures.                                                                      |
| Melting point                               | : No data available                                                                                     |
| Freezing point                              | : No data available                                                                                     |
| Boiling point                               | : No data available                                                                                     |
| Flash point                                 | : No data available                                                                                     |
| Auto-ignition temperature                   | : No data available                                                                                     |
| Decomposition temperature                   | : No data available                                                                                     |
| Flammability (solid, gas)                   | : Not flammable - not combustible                                                                       |
| Vapor pressure                              | : Not applicable.                                                                                       |
| Relative vapor density at 20 °C             | : No data available                                                                                     |
| Relative density                            | : No data available                                                                                     |
| Relative gas density                        | : Lighter than air.                                                                                     |
| Solubility                                  | : Water: Solubility in water of component(s) of the mixture :<br>• : 2000 mg/l • : 20 mg/l • : 1.5 mg/l |
| Log Pow                                     | : Not applicable for gas-mixtures.                                                                      |
| Log Kow                                     | : Not applicable for gas-mixtures.                                                                      |
| Viscosity, kinematic                        | : Not applicable.                                                                                       |
| Viscosity, dynamic                          | : Not applicable.                                                                                       |
| Explosive properties                        | : Not applicable - not flammable.                                                                       |
| Oxidizing properties                        | : None.                                                                                                 |
| Explosive limits                            | : Not applicable - not flammable                                                                        |

#### 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 |
|----------------|------------------|

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| Nitrogen (7727-37-9)                               |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| LC50 inhalation rat (ppm)                          | 410000 ppm/4h                                                                                                                        |
| Helium (7440-59-7)                                 |                                                                                                                                      |
| LC50 inhalation rat (ppm)                          | 410000 ppm/4h                                                                                                                        |
| ATE US (gases)                                     | 410000.00000000 ppmV/4h                                                                                                              |
| Skin corrosion/irritation                          | : Not classified<br>pH: Not applicable for gas-mixtures.                                                                             |
| Serious eye damage/irritation                      | : Not classified<br>pH: Not applicable for gas-mixtures.                                                                             |
| Respiratory or skin sensitization                  | : Not classified                                                                                                                     |
| Germ cell mutagenicity                             | : Not classified                                                                                                                     |
| Carcinogenicity                                    | : Not classified                                                                                                                     |
| Reproductive toxicity                              | : Not classified                                                                                                                     |
| Specific target organ toxicity (single exposure)   | : Not classified                                                                                                                     |
| Specific target organ toxicity (repeated exposure) | : Not classified<br>No known effects from this product.                                                                              |
| Aspiration hazard                                  | : Not classified<br>Not applicable for gases and gas-mixtures.                                                                       |
| Symptoms/injuries after inhalation                 | : May displace oxygen and cause rapid suffocation. May increase respiration and heart rate. If you feel unwell, seek medical advice. |
| 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

Ecology - general : Classification criteria are not met.

### 12.2. Persistence and degradability

| LASAL 83                      |                                              |
|-------------------------------|----------------------------------------------|
| Persistence and degradability | No data available.                           |
| Carbon dioxide (124-38-9)     |                                              |
| Persistence and degradability | No ecological damage caused by this product. |
| Nitrogen (7727-37-9)          |                                              |
| Persistence and degradability | No ecological damage caused by this product. |
| Helium (7440-59-7)            |                                              |
| Persistence and degradability | No ecological damage caused by this product. |

### 12.3. Bioaccumulative potential

| LASAL 83                  |                                              |
|---------------------------|----------------------------------------------|
| Log Pow                   | Not applicable for gas-mixtures.             |
| Log Kow                   | Not applicable for gas-mixtures.             |
| Bioaccumulative potential | No data available.                           |
| Carbon dioxide (124-38-9) |                                              |
| BCF fish 1                | (no bioaccumulation)                         |
| Log Pow                   | 0.83                                         |
| Bioaccumulative potential | No ecological damage caused by this product. |
| Nitrogen (7727-37-9)      |                                              |

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|                           |                                              |
|---------------------------|----------------------------------------------|
| Log Pow                   | Not applicable for inorganic gases.          |
| Bioaccumulative potential | No ecological damage caused by this product. |

### Helium (7440-59-7)

|                           |                                              |
|---------------------------|----------------------------------------------|
| Log Pow                   | Not applicable for inorganic gases.          |
| Bioaccumulative potential | No ecological damage caused by this product. |

### 12.4. Mobility in soil

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|                  |                    |
|------------------|--------------------|
| Mobility in soil | No data available. |
|------------------|--------------------|

#### Carbon dioxide (124-38-9)

|                |                                              |
|----------------|----------------------------------------------|
| Ecology - soil | No ecological damage caused by this product. |
|----------------|----------------------------------------------|

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

|                |                                              |
|----------------|----------------------------------------------|
| Ecology - soil | No ecological damage caused by this product. |
|----------------|----------------------------------------------|

#### Helium (7440-59-7)

|                |                                              |
|----------------|----------------------------------------------|
| Ecology - soil | No ecological damage caused by this product. |
|----------------|----------------------------------------------|

### 12.5. Other adverse effects

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Effect on ozone layer        | : None.                                                   |
| Effect on the global warming | : Contains greenhouse gas(es) not covered by 842/2006/EC. |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                |                                                                                                                                                                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste treatment methods        | : Contact supplier if guidance is required. May be vented to atmosphere in a well ventilated place. 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.                                                                                                         |
| Ecology - waste materials      | : None known.                                                                                                                                                                                                                                                                |

## SECTION 14: Transport information

|                                |                                 |
|--------------------------------|---------------------------------|
| In accordance with DOT         |                                 |
| Transport document description | : UN1956 Compressed gas, n.o.s. |
| UN-No.(DOT)                    | : 1956                          |
| DOT NA no.                     | : UN1956                        |
| Proper Shipping Name (DOT)     | : Compressed gas, n.o.s.        |
| Hazard labels (DOT)            | : 2.2 - Non-flammable gas       |



|                                                                  |                                                                                                         |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| DOT Symbols                                                      | : G - Identifies PSN requiring a technical name                                                         |
| DOT Packaging Exceptions (49 CFR 173.xxx)                        | : 306;307                                                                                               |
| DOT Packaging Non Bulk (49 CFR 173.xxx)                          | : 302;305                                                                                               |
| DOT Packaging Bulk (49 CFR 173.xxx)                              | : 314;315                                                                                               |
| 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. |
|-------------------|-------------------------------------------|

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Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

### 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  
LQ : 120ml  
Excepted quantities (ADR) : E1

### Transport by sea

UN-No. (IMDG) : 1956  
Proper Shipping Name (IMDG) : COMPRESSED GAS, N.O.S.  
Class (IMDG) : 2.2 - Non-flammable, non-toxic 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

No additional information available

### 15.2. International regulations

#### CANADA

| Carbon dioxide (124-38-9)                             |                          |
|-------------------------------------------------------|--------------------------|
| Listed on the Canadian DSL (Domestic Substances List) |                          |
| WHMIS Classification                                  | Class A - Compressed Gas |
| Nitrogen (7727-37-9)                                  |                          |
| Listed on the Canadian DSL (Domestic Substances List) |                          |
| WHMIS Classification                                  | Class A - Compressed Gas |
| Helium (7440-59-7)                                    |                          |
| Listed on the Canadian DSL (Domestic Substances List) |                          |
| WHMIS Classification                                  | Class A - Compressed Gas |

### EU-Regulations

No additional information available

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

Not classified

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

15.2.2. National regulations

No additional information available

15.3. US State regulations

|                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Carbon dioxide (124-38-9)</b>                                                                                                                          |
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |
| <b>Nitrogen (7727-37-9)</b>                                                                                                                               |
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |
| <b>Helium (7440-59-7)</b>                                                                                                                                 |
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>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.                                                                          |
|                       | :                                                                                                                                                                                         |
| Training advice       | : Receptacle under pressure.                                                                                                                                                              |
| 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. |

Full text of H-phrases: see section 16:

|                |                                                    |
|----------------|----------------------------------------------------|
| Compressed gas | Gases under pressure Compressed gas                |
| Liquefied gas  | Gases under pressure Liquefied gas                 |
| Simple Asphy   | Simple Asphyxiant                                  |
| H280           | Contains gas under pressure; may explode if heated |
| H380           | May displace oxygen and cause rapid suffocation    |

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.*