

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
 Reference number: D-CO2-CO-C3H8-N2-08  
 Issue date: 4/15/2011 Revision date: 12/7/2023 Supersedes version of: 10/4/2021 Version: 2.7

### Danger



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

### 1.1. Product identifier

Trade name : Lambda Mix A2  
 SDS no : D-CO2-CO-C3H8-N2-08  
 UFI : HNE2-20WA-P00W-MGR9

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

Relevant identified uses : Industrial and professional use for chemical analysis, calibration, (routine) quality control, laboratory use, under controlled conditions.  
 Perform risk assessment prior to use.

Uses advised against : Consumer use.  
 Uses other than those listed above are not supported, contact your supplier for more information on other uses.  
 Attention: These products must not be applied to humans or animals unless they are expressly designated as medical or medicinal gases!.

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

Messer Industriegase GmbH  
 Messer- Platz 1  
 D - 65812 Bad Soden am Taunus  
 Germany  
 T +49 (0) 6196 7760-200 - F +49 (0) 6196 7760-280  
[SDB.de@messergroup.com](mailto:SDB.de@messergroup.com) - [www.messer.de](http://www.messer.de)

### 1.4. Emergency telephone number

Emergency telephone number : Messer Produktionsgesellschaft mbH Salzgitter, +49 (0) 5341 21-9333, erreichbar Montags 0:00 bis Sonntags 24:00

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

Physical hazards	Gases under pressure : Compressed gas	H280
Health hazards	Reproductive toxicity, Category 1A	H360
	Specific target organ toxicity – Repeated exposure, Category 2	H373

### 2.2. Label elements

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

Hazard pictograms (CLP) :



GHS04

GHS08

Signal word (CLP) :

: Danger

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

Hazard statements (CLP)	: H280 - Contains gas under pressure; may explode if heated. H360 - May damage the unborn child. (if inhaled). H373 - May cause damage to organs (blood, blood vessels of brain, blood vessels) through prolonged or repeated exposure (if inhaled).
Precautionary statements (CLP)	
- Prevention	: P280 - Wear protective gloves, protective clothing, eye protection. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe gas, vapours.
- Response	: P308+P313 - IF exposed or concerned: Get medical advice/attention.
- Storage	: P405 - Store locked up. P403 - Store in a well-ventilated place.
Supplemental information	: Restricted to professional users.

### 2.3. Other hazards

None.  
Not classified as PBT or vPvB.  
The substance/mixture has no endocrine disrupting properties.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Nitrogen	CAS-No.: 7727-37-9 EC-No.: 231-783-9 EC Index-No.: --- REACH-no: *1	Rest	Press. Gas (Comp.), H280
Carbon dioxide	CAS-No.: 124-38-9 EC-No.: 204-696-9 EC Index-No.: --- REACH-no: *1	14	Press. Gas (Liq.), H280
carbon monoxide	CAS-No.: 630-08-0 EC-No.: 211-128-3 EC Index-No.: 006-001-00-2 REACH-no: 01-2119480165-39	3.5	Flam. Gas 1B, H221 Press. Gas (Comp.), H280 Acute Tox. 3 (Inhalation:gas), H331 Repr. 1A, H360D STOT RE 1, H372
propane	CAS-No.: 74-98-6 EC-No.: 200-827-9 EC Index-No.: 601-003-00-5 REACH-no: 01-2119486944-21	0.2	Flam. Gas 1A, H220 Press. Gas (Liq.), H280

Full text of H- and EUH-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

\*1: Listed in Annex IV / V REACH, exempted from registration.

\*3: Registration not required: Substance manufactured or imported < 1t/y.

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.

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

See section 11.

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

Obtain medical assistance.  
Recommendations to physicians: Provide oxygen.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Shutting off the source of the gas is the preferred method of control.  
Product does not burn, use fire control measures appropriate for the surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

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

- Specific hazards : Exposure to fire may cause containers to rupture.  
Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : Carbon monoxide.

#### 5.3. Advice for firefighters

- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.  
If possible, stop flow of product.  
Use water spray or fog to knock down fire fumes if possible.  
Move containers away from the fire area if this can be done without risk.
- Special protective equipment for fire fighters : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus.  
Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams.  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

### SECTION 6: Accidental release measures

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

- For non-emergency personnel : Act in accordance with local emergency plan.  
Try to stop release.  
Evacuate area.  
Ensure adequate air ventilation.  
Stay upwind.  
See section 8 of the SDS for more information on personal protective equipment.
- For emergency responders : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.  
See section 5.3 of the SDS for more information.

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

### 6.2. Environmental precautions

Try to stop release.

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

Ventilate area.

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Safe use of the product

- : Avoid exposure, obtain special instructions before use.
- The product must be handled in accordance with good industrial hygiene and safety procedures.
- Only experienced and properly instructed persons should handle gases under pressure.
- Consider pressure relief device(s) in gas installations.
- Ensure the complete gas system was (or is regularly) checked for leaks before use.
- Do not smoke while handling product.
- Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
- Avoid suck back of water, acid and alkalis.
- Do not breathe gas.
- Avoid release of product into work area.

Safe handling of the gas receptacle

- : Refer to supplier's container handling instructions.
- Do not allow backfeed into the container.
- Protect containers from physical damage; do not drag, roll, slide or drop.
- When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.
- Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
- If user experiences any difficulty operating valve discontinue use and contact supplier.
- Never attempt to repair or modify container valves or safety relief devices.
- Damaged valves should be reported immediately to the supplier.
- Keep container valve outlets clean and free from contaminants particularly oil and water.
- Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
- Close container valve after each use and when empty, even if still connected to equipment.
- Never attempt to transfer gases from one cylinder/container to another.
- Never use direct flame or electrical heating devices to raise the pressure of a container.
- Do not remove or deface labels provided by the supplier for the identification of the content of the container.
- Suck back of water into the container must be prevented.
- Open valve slowly to avoid pressure shock.

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

- Observe all regulations and local requirements regarding storage of containers.
- Containers should not be stored in conditions likely to encourage corrosion.
- Container valve guards or caps should be in place.
- Containers should be stored in the vertical position and properly secured to prevent them from falling over.
- Stored containers should be periodically checked for general condition and leakage.
- Keep container below 50°C in a well ventilated place.
- Store containers in location free from fire risk and away from sources of heat and ignition.
- Keep away from combustible materials.

### 7.3. Specific end use(s)

None.

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

carbon monoxide (630-08-0)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Kohlenstoffmonoxid
AGW (OEL TWA) [1]	35 mg/m <sup>3</sup>
AGW (OEL TWA) [2]	30 ppm
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); Z - Ein Risiko der Fruchtschädigung kann auch bei Einhaltung des AGW und des BGW nicht ausgeschlossen werden; EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich)
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Kohlenstoffmonoxid (Kohlenmonoxid)
Biological limit value	5 % Parameter: CO-Hb - Untersuchungsmaterial: B = Vollblut - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 05/2013 DFG
Remark	Ableitung des BGW als Höchstwert wegen akut toxischer Effekte. Gesonderte Bewertung für Raucher
Regulatory reference	TRGS 903

Carbon dioxide (124-38-9)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Kohlenstoffdioxid
AGW (OEL TWA) [1]	9100 mg/m <sup>3</sup>
AGW (OEL TWA) [2]	5000 ppm
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich)
Regulatory reference	TRGS900

propane (74-98-6)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Propan
AGW (OEL TWA) [1]	1800 mg/m <sup>3</sup>
AGW (OEL TWA) [2]	1000 ppm

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

Peak exposure limitation factor	4(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)
Regulatory reference	TRGS900

carbon monoxide (630-08-0)	
DNEL: Derived no effect level (Workers)	
Acute - local effects, inhalation	117 ppm
Acute - systemic effects, inhalation	117 mg/m <sup>3</sup>
Long-term - local effects, inhalation	23 ppm
Long-term - systemic effects, inhalation	23 mg/m <sup>3</sup>

PNEC (Predicted No-Effect Concentration) : None established.

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

Product to be handled in a closed system and under strictly controlled conditions.  
Provide adequate general and local exhaust ventilation.  
Preferably use permanent leak-tight installations (e.g. welded pipes).  
Systems under pressure should be regularly checked for leakages.  
Ensure exposure is below occupational exposure limits (where available).  
Consider the use of a work permit system e.g. for maintenance activities.

#### 8.2.2. Individual protection measures, e.g. personal protective equipment

- A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk.  
The following recommendations should be considered:  
PPE compliant to the recommended EN/ISO standards should be selected.
- Eye/face protection : Wear safety glasses with side shields.  
Standard EN 166 - Personal eye-protection - specifications.
  - Skin protection : Wear working gloves when handling gas containers.  
Standard EN 388 - Protective gloves against mechanical risks, performance level 1 or higher.
  - Hand protection : Wear safety shoes while handling containers.  
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
  - Other : Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.  
Keep self contained breathing apparatus readily available for emergency use.  
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.  
Consult respiratory device supplier's product information for the selection of the appropriate device.  
When indicated by a risk assessment, Respiratory Protective Equipment must be used. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD.
  - Respiratory protection : None in addition to the above sections.
  - Thermal hazards : None in addition to the above sections.

#### 8.2.3. Environmental exposure controls

Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

### SECTION 9: Physical and chemical properties

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

Appearance	: Gas.
- Physical state at 20°C / 101.3kPa	: Colourless.
- Colour	: Odour threshold is subjective and inadequate to warn of overexposure.
Odour	Mixture contains one or more component(s) which have the following odour: Stenchant often added. Sweetish.
Melting point / Freezing point	: Not applicable for gas mixtures.
Boiling point	: Not applicable for gas mixtures. It is technically not possible to determine the boiling point or range of this mixture. Component with lowest boiling point: Nitrogen -196 °C
Flammability	: Non flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not applicable for gases and gas mixtures.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
pH	: Not applicable for gases and gas mixtures.
Viscosity, kinematic	: No reliable data available.
Water solubility [20°C]	: Mixture is partially soluble in water
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for gas mixtures.
Vapour pressure [20°C]	: Not applicable.
Vapour pressure [50°C]	: Not applicable.
Density and/or relative density	: Not applicable.
Relative vapour density (air=1)	: Lighter or similar to air.
Particle characteristics	: Not applicable for gases and gas mixtures.

#### 9.2. Other information

##### 9.2.1. Information with regard to physical hazard classes

Explosive properties	: Not applicable.
Explosion limits	: Non flammable.
Oxidising properties	: Not applicable.

##### 9.2.2. Other safety characteristics

Molar mass	: Not applicable for gas mixtures.
Evaporation rate	: Not applicable for gases and gas mixtures.
Other data	: None.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Data for mixtures are not available.  
This mixture contains components with the following reactivity : Can form explosive mixture with air. May react violently with oxidants.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

None.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).  
Avoid moisture in installation systems.

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

### 10.5. Incompatible materials

None.

For additional information on compatibility refer to ISO 11114.

### 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 hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

: Classification criteria are not met.

Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO<sub>2</sub> has been found to act synergistically to increase the toxicity of certain other gases (CO, NO<sub>2</sub>). CO<sub>2</sub> has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems.

For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at [www.eiga.eu](http://www.eiga.eu).

#### carbon monoxide (630-08-0)

LC50 Inhalation - Rat [ppm]	3760 ppm/1h (ADR) 1300 ppm/4h (CLP)
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#### propane (74-98-6)

LC50 Inhalation - Rat [ppm]	20000 ppm/4h
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#### Skin corrosion/irritation

: No known effects from this product.

#### Serious eye damage/irritation

: No known effects from this product.

#### Respiratory or skin sensitisation

: No known effects from this product.

#### Germ cell mutagenicity

: No known effects from this product.

#### Carcinogenicity

: No known effects from this product.

#### Toxic for reproduction : Fertility

: May damage fertility.

#### Toxic for reproduction : unborn child

: May damage the unborn child.

#### STOT-single exposure

: No known effects from this product.

#### STOT-repeated exposure

: May cause damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

: Not applicable for gases and gas mixtures.

### 11.2. Information on other hazards

#### Other information

: For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at [www.eiga.eu](http://www.eiga.eu).

Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO<sub>2</sub> has been found to act synergistically to increase the toxicity of certain other gases (CO, NO<sub>2</sub>). CO<sub>2</sub> has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems.

The substance/mixture has no endocrine disrupting properties.

## SECTION 12: Ecological information

### 12.1. Toxicity

#### Assessment

: Classification criteria are not met.

#### EC50 48h - Daphnia magna [mg/l]

: No data available.

#### EC50 72h - Algae [mg/l]

: No data available.



# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

LC50 96 h - Fish [mg/l] : No data available.

carbon monoxide (630-08-0)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

Carbon dioxide (124-38-9)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

propane (74-98-6)	
EC50 48h - Daphnia magna [mg/l]	27.1 mg/l
EC50 72h - Algae [mg/l]	11.9 mg/l
LC50 96 h - Fish [mg/l]	49.9 mg/l

Nitrogen (7727-37-9)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

### 12.2. Persistence and degradability

Assessment : No data available.

### 12.3. Bioaccumulative potential

Assessment : No data available.

### 12.4. Mobility in soil

Assessment : Partition into soil is unlikely.

### 12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

### 12.6. Endocrine disrupting properties

Assessment : The substance/mixture has no endocrine disrupting properties.

### 12.7. Other adverse effects

Other adverse effects : No known effects from this product.  
Effect on the ozone layer : None.  
Effect on global warming : Contains greenhouse gas(es).

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Contact supplier if guidance is required.  
Ensure that the emission levels from local regulations or operating permits are not exceeded.  
Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.eu> for more guidance on suitable disposal methods.  
Must not be discharged to atmosphere.  
Return unused product in original container to supplier.  
16 05 04 \*: Gases in pressure containers (including halons) containing hazardous substances.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended)

#### 13.2. Additional information

External treatment and disposal of waste should comply with applicable local and/or national regulations.

### SECTION 14: Transport information

#### 14.1. UN number or ID number

In accordance with ADR / RID / IMDG / IATA / ADN  
UN-No. : 1956

#### 14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : COMPRESSED GAS, N.O.S. (Nitrogen, carbon monoxide)  
Transport by air (ICAO-TI / IATA-DGR) : Compressed gas, n.o.s. (Nitrogen, carbon monoxide)  
Transport by sea (IMDG) : COMPRESSED GAS, N.O.S. (Nitrogen, carbon monoxide)

#### 14.3. Transport hazard class(es)

#### Labelling



2.2 : Non flammable, non-toxic gases.

#### Transport by road/rail (ADR/RID)

Class : 2  
Classification code : 1A  
Hazard identification number : 20  
Tunnel Restriction : E - Passage forbidden through tunnels of category E

#### Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 2.2

#### Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 2.2  
Emergency Schedule (EmS) - Fire : F-C  
Emergency Schedule (EmS) - Spillage : S-V

#### 14.4. Packing group

Transport by road/rail (ADR/RID) : Not applicable.  
Transport by air (ICAO-TI / IATA-DGR) : Not applicable.  
Transport by sea (IMDG) : Not applicable.

#### 14.5. Environmental hazards

Transport by road/rail (ADR/RID) : None.  
Transport by air (ICAO-TI / IATA-DGR) : None.  
Transport by sea (IMDG) : None.

### 14.6. Special precautions for user

#### Packing Instruction(s)

Transport by road/rail (ADR/RID)	: P200.
Transport by air (ICAO-TI / IATA-DGR)	
Passenger and Cargo Aircraft	: 200.
Cargo Aircraft only	: 200.
Transport by sea (IMDG)	: P200.

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 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.
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### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU-Regulations

Restrictions on use	: Restricted to professional users (Annex XVII REACH). Contains no substance(s) listed on the REACH Candidate List.
Other information, restriction and prohibition regulations	: Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals). Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants).
Seveso Directive : 2012/18/EU (Seveso III)	: Not covered.

#### National regulations

Water hazard class (WGK)	: 1 - Slightly hazardous to water.
Regulatory reference	: Ensure all national/local regulations are observed. Gesetz zum Schutz der arbeitenden Jugend (Jugendarbeitsschutzgesetz-JArbSchG) Betriebssicherheitsverordnung-BetrSichV TRBS 3145/TRGS 745 - Ortsbewegliche Druckgasbehälter – Füllen, Bereithalten, innerbetriebliche Beförderung, Entleeren TRGS 510 - Lagerung von Gefahrstoffen in ortsbeweglichen Behältern TRGS 407 - Tätigkeiten mit Gasen – Gefährdungsbeurteilung TRBS 2141 - Gefährdungen durch Dampf und Druck - Allgemeine Anforderungen. Gesetz zum Schutz von Müttern bei der Arbeit, in der Ausbildung und im Studium (Mutterschutzgesetz – MuSchG) Verordnung über Verbote und Beschränkungen des Inverkehrbringens gefährlicher Stoffe, Zubereitungen und Erzeugnisse nach dem Chemikaliengesetz (Chemikalien-Verbotsverordnung-ChemVerbotsV) . Vierte Verordnung zur Durchführung des Bundes-Immissionsschutzgesetzes (Verordnung über genehmigungsbedürftige Anlagen - 4. BImSchV) Anhang 2 Stoffliste zu Nr. 9.3 des Anhangs 1. Zwölfte Verordnung zur Durchführung des Bundes-Immissionsschutzgesetzes (12. BImSchV-Störfall-Verordnung). Classification for storage according to TRGS 510: 2A Gase (ohne Aerosolpackungen und Feuerzeuge). TA Luft.

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

### 15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

### SECTION 16: Other information

Indication of changes	: Revised safety data sheet in accordance with commission regulation (EU) No 2020/878.
Abbreviations and acronyms	: ATE - Acute Toxicity Estimate. CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. EINECS - European Inventory of Existing Commercial Chemical Substances. CAS# - Chemical Abstract Service number. PPE - Personal Protection Equipment. LC50 - Lethal Concentration to 50 % of a test population. RMM - Risk Management Measures. PBT - Persistent, Bioaccumulative and Toxic. vPvB - Very Persistent and Very Bioaccumulative. STOT- SE : Specific Target Organ Toxicity - Single Exposure. CSA - Chemical Safety Assessment. EN - European Standard. UN - United Nations. ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road. IATA - International Air Transport Association. IMDG code - International Maritime Dangerous Goods. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail. WGK - Water Hazard Class. STOT - RE : Specific Target Organ Toxicity - Repeated Exposure. UFI : Unique Formula Identifier.
Training advice	: None.
Further information	: Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). Classification using data from databases maintained by the European Industrial Gases Association (EIGA). Data is maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at : <a href="http://www.eiga.eu">http://www.eiga.eu</a> .

Full text of H- and EUH-statements	
Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Gas 1B	Flammable gases, Category 1B
H220	Extremely flammable gas.
H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.
H331	Toxic if inhaled.
H360	May damage fertility or the unborn child.
H360D	May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas

# Safety Data Sheet

## Lambda - Mix type A2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878  
Reference number: D-CO2-CO-C3H8-N2-08

Repr. 1A	Reproductive toxicity, Category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

### DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.  
Details given in this document are believed to be correct at the time of going to press.  
Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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