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Revised edition no: 4.0
Revision date: 2024-02-02
Supersedes version of: 2023-01-24

NOAL_1035

Country : DK / Language : EN

Lasal P51, Lasal 53, Lasal P61, Lasal 66, Lasal 41, Lasal 43, Lasal 83, 0,2-20% CO2 + 1-40% N2 + He

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

1.1. Product identifier

Trade name : Lasal P51, Lasal 53, Lasal P61, Lasal 66, Lasal 41, Lasal 43, Lasal 83, 0,2-20% CO2 + 1-

40% N2 + He

SDS no : NOAL_1035

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

Relevant identified uses : Industrial and professional uses. Perform risk assessment prior to use.

Industrial and professional use for chemical analysis, calibration, (routine) quality control,

laboratory use, under controlled conditions.
Contact supplier for more information on uses.

Uses advised against : Consumer use

Uses other than those listed above are not supported, contact your supplier for more

information on other uses.

1.3. Details of the supplier of the safety data sheet

Company identification

Supplier

AIR LIQUIDE Denmark A/S Uraniavej 6 8700 Horsens - DENMARK

T +45 76 25 25 25

E-Mail address (competent person) : eunordic-sds@airliquide.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Denmark			+45 82 12 12 12	
	Bispebjerg Hospital	Opgang 20 C 2400		

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

2.2. Label elements

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

Hazard pictograms (CLP)

CHSON

GHS04

Signal word (CLP) : Warning

Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated.



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Precautionary statements (CLP)

- Storage : P403 - Store in a well-ventilated place.

2.3. Other hazards

Asphyxiant in high concentrations.

In high concentrations CO2 causes rapid circulatory insufficiency even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and death.

Not classified as PBT or vPvB.

The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not established.

3.2. Mixtures

Name	Product identifier	Composition [V-%]:	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	40	Press. Gas (Comp.), H280
Helium	CAS-No.: 7440-59-7 EC-No.: 231-168-5 EC Index-No.: REACH-no: *1	40	Press. Gas (Comp.), H280
Carbon dioxide	CAS-No.: 124-38-9 EC-No.: 204-696-9 EC Index-No.: REACH-no: *1	20	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.

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

- 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

In high concentrations may cause asphyxiation. Symptoms may include loss of

mobility/consciousness. Victim may not be aware of asphyxiation.

See section 11.

^{*1:} Listed in Annex IV / V REACH, exempted from registration.

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



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

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog.

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/explode.

Hazardous combustion products : None.

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 : In confined space use self-contained breathing apparatus.

Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire

lignters.

Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full

face mask.

Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters. EN 15090 Footwear for firefighters. EN 443 Helmets for fire fighting in

buildings and other structures.

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.

Oxygen detectors should be used when asphyxiating gases may be released.

See section 5.3 of the SDS for more information.

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.



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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product

: Do not breathe gas.

Avoid release of product into atmosphere.

The product must be handled in accordance with good industrial hygiene and safety

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 regularily) 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.

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



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Carbon dioxide (124-38-9)			
Denmark - Occupational Exposure Limits			
Local name	Carbondioxid (Kuldioxid; Kulsyre)		
OEL TWA	9000 mg/m³		
	5000 ppm		
Remark	E (betyder, at stoffet har en EF-grænseværdi)		
Regulatory reference	BEK nr 1054 af 28/06/2022		

DNEL (Derived-No Effect Level) None available

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

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation.

Systems under pressure should be regularily checked for leakages. Ensure exposure is below occupational exposure limits (where available). Oxygen detectors should be used when asphyxiating gases may be released. 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.

: Wear safety glasses with side shields.

Standard EN 166 - Personal eye-protection - specifications.

Skin protection

· Eye/face protection

- Hand protection

- Other

· Respiratory protection

- : Wear working gloves when handling gas containers.
 - Standard EN 388 Protective gloves against mechanical risks, performance level 1 or higher. Recommended types include wrist gloves from leather or synthetic material with equivalent performance, fabric gloves, fabric gloves with leather palms.
- Wear safety shoes while handling containers.
 - Standard EN ISO 20345 Personal protective equipment Safety footwear.
- Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.

Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers.

Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask

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.

Gas filters do not protect against oxygen deficiency.

Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks . Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.



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 Thermal hazards : None in addition to the above sections.

8.2.3. Environmental exposure controls

None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

- Physical state at 20°C / 101.3kPa · Gas Colour · Colourless Odour Odourless.

Odour threshold is subjective and inadequate to warn of overexposure.

рΗ Not applicable for gases and gas mixtures.

Melting point / Freezing point Not applicable for gas mixtures. Not applicable for gas mixtures. Boiling point

Flash point Not applicable for gases and gas mixtures.

Flammability Non flammable. **Explosive limits** Non flammable. Lower explosion limit Not available Upper explosion limit : Not available Vapour pressure [20°C] Not applicable. Vapour pressure [50°C] Not applicable. Not applicable Density

Vapour density Not applicable for gases and gas mixtures.

Relative density, liquid (water=1) Not applicable Relative density, gas (air=1) Lighter or similar to air.

Solubility in water of component(s) of the mixture : Water solubility

• Carbon dioxide: 2000 mg/l • Nitrogen: 20 mg/l • Helium: 1.5 mg/l

Partition coefficient n-octanol/water (Log Kow) : Not applicable for gas mixtures.

Auto-ignition temperature Non flammable. Decomposition temperature : Not applicable.

Viscosity, kinematic : No reliable data available.

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. 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

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal use.

Reactivity : None.



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10.4. Conditions to avoid

Avoid moisture in installation systems.

10.5. Incompatible materials

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

Toxicological effects not expected by inhalation from this product if occupational exposure limit values are not exceeded.

Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO2 has been found to act synergistically to increase the toxicity of certain other gases (CO, NO2). CO2 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.

No known effects from this product. 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 : No known effects from this product. Toxic for reproduction: unborn child : No known effects from this product. STOT-single exposure : No known effects from this product. STOT-repeated exposure

: Not applicable for gases and gas mixtures. **Aspiration hazard**

11.2. Information on other hazards

Other information

: For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at www.eiga.eu.

Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO2 has been found to act synergistically to increase the toxicity of certain other gases (CO, NO2). CO2 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

: No ecological damage caused by this product. Assessment

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 ecological damage caused by this product.



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12.3. Bioaccumulative potential

Assessment : No data available.

12.4. Mobility in soil

Assessment : Because of its high volatility, the product is unlikely to cause ground or water pollution.

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

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

May be vented to atmosphere in a well ventilated place.

Do not discharge into any place where its accumulation could be dangerous.

Return unused product in original container to supplier.

List of hazardous waste codes (from Commission

Decision 2000/532/EC as amended)

: 16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

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/inland waterways

(ADR/RID/ADN)

: COMPRESSED GAS, N.O.S. (Nitrogen, Helium)

: Compressed gas, n.o.s. (Nitrogen, Helium) Transport by air (ICAO-TI / IATA-DGR) : COMPRESSED GAS, N.O.S. (Nitrogen, Helium) Transport by sea (IMDG)

14.3. Transport hazard class(es)

Labelling

2.2 : Non-flammable, non-toxic gases.

Transport by road/rail/inland waterways (ADR/RID/ADN)

Class . 2 : 1A Classification code Hazard identification number

Tunnel Restriction : E - Passage forbidden through tunnels of category E



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: Not established.

· None

: P200

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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/inland waterways

(ADR/RID/ADN)

Transport by air (ICAO-TI / IATA-DGR) : Not established.
Transport by sea (IMDG) : Not established.

14.5. Environmental hazards

Transport by road/rail/inland waterways

(ADR/RID/ADN)

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/inland waterways

(ADR/RID/ADN)

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.

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 : None.

Contains no substance(s) listed on the REACH Candidate List

National legislation : Ensure all national/local regulations are observed.

Seveso Directive: 2012/18/EU (Seveso III) : Not covered.

National regulations

Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

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



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SECTION 16: Other information

Indication of changes

: Safety data sheet in accordance with commission regulation (EU) No 2020/878.

Section	Changed item	Change	Comments
1.3	Company		Version 4.0. New address in Sweden. (This change only applies to the Swedish (SE) version of this SDS)

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 - 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 : The hazard of asphyxiation is often overlooked and must be stressed during operator

training.

For more guidance, refer to EIGA SL 01 "Dangers of Asphyxiation", downloadable at

http://www.eiga.eu..

: 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 : http://www.eiga.eu.

Classification in accordance with the procedures and calculation methods of Regulation

(EC) 1272/2008 (CLP).

Full text of H- and EUH-statements		
H280	Contains gas under pressure; may explode if heated.	
Press. Gas (Comp.)	Gases under pressure : Compressed gas	
Press. Gas (Liq.)	Gases under pressure : Liquefied gas	

DISCLAIMER OF LIABILITY

Further information

: 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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