

Safety Data Sheet

according to Regulation (EU) 2015/830

**SANARC C2- C2,5 - C8 - C15- C18- C20- C50- C3
O1 - C5 O2 - C5 O5 - C7 O2 - C7 O3 - C8 O1 - C8
O2 - C9 O1 - C12 O2 - C14 O4 - C15 O2 - C15 O5**

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Version: 4.0

SDS reference: NPAG001

Warning



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

1.1. Product identifier

Trade name : SANARC C2- C2,5 - C8 - C15- C18- C20- C50- C3 O1 - C5 O2 - C5 O5 - C7 O2 - C7 O3 - C8 O1 - C8 O2 - C9 O1 - C12 O2 - C14 O4 - C15 O2 - C15 O5

SDS no : NPAG001

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.
Shield gas for welding processes.
Contact supplier for more information on uses.
Consumer use.

Uses advised against : None.

1.3. Details of the supplier of the safety data sheet

Company identification : Nippon Gases DEUTSCHLAND GMBH
Hans - Böckler - Str 1.
40476 Düsseldorf GERMANY
www.nippongases.de
sds.germany@nippongases.com

Nippon Gases Europe representative sites :

- Nippon Gases Belgium NV, Metropoolstraat 17, B-2900 Schoten, België
Tel. +32 3 641 84 50
- Nippon Gases Deutschland GmbH, Hans-Böckler-Str. 1, D-40476 Düsseldorf, Deutschland
Tel. +49 (0)21 12 60 00
- Nippon Gases Netherlands BV, Beugsloepweg 3, NL-3133 KV Vlaardingen, Nederland
Tel. +31 10 434 04 55

1.4. Emergency telephone number

Emergency telephone number : Nippon Gases Europe Emergency Numbers :
- Belgium :
+32 14 25 06 11 (during working hours)
+32 3 252 02 31 (after working hours)
Mobile : +32 486 43 04 98
Antigifcentrum / Centre antipoison : +32 70 24 52 45
- Netherlands :
Emergency n° : See Belgium
Antigifcentrum : +31 30 274 88 88
- Germany :
+49 800 724 29 77
24- Std.-Giftnotrufnummer : +49 30 30 68 67 00
- Other country : See Belgium

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) : 
GHS04

Signal word (CLP) : Warning

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

Precautionary statements (CLP)
- Storage : P403 - Store in a well-ventilated place.

2.3. Other hazards

: None.

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]
Argon	(CAS-No.) 7440-37-1 (EC-No.) 231-147-0 (EC Index-No.) (REACH-no) *1	>= 50	Press. Gas (Comp.), H280
Carbon dioxide	(CAS-No.) 124-38-9 (EC-No.) 204-696-9 (EC Index-No.) (REACH-no) *1	<= 30	Press. Gas (Liq.), H280
Oxygen	(CAS-No.) 7782-44-7 (EC-No.) 231-956-9 (EC Index-No.) 008-001-00-8 (REACH-no) *1	<= 17	Ox. Gas 1, H270 Press. Gas (Comp.), H280

Full text of H-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.

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Adverse effects not expected from this product.
- 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

: Refer to section 11.

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.
- 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- : Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Act in accordance with local emergency plan.
Stay upwind.

6.2. Environmental precautions

No additional information available

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 : 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.
Use only oxygen approved lubricants and oxygen approved sealings.
Avoid suck back of water, acid and alkalis.
Do not breathe gas.
Avoid release of product into atmosphere.
- Safe handling of the gas receptacle : Refer to supplier's container handling instructions.
Do not allow backfeed into the container.
Protect cylinders 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Carbon dioxide (124-38-9)	
EU - Occupational Exposure Limits	
Local name	Carbon dioxide
IOELV TWA (mg/m ³)	9000 mg/m ³
IOELV TWA (ppm)	5000 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Belgium - Occupational Exposure Limits	
Local name	Carbone (dioxyde de) # Koolstofdioxide
Limit value (mg/m ³)	9131 mg/m ³
Limit value (ppm)	5000 ppm
Short time value (mg/m ³)	54784 mg/m ³
Short time value (ppm)	30000 ppm
Remark (BE)	A: la mention "A" signifie que l'agent libère un gaz ou une vapeur qui n'ont en eux-mêmes aucun effet physiologique mais peuvent diminuer le taux d'oxygène dans l'air. Lorsque le taux d'oxygène descend en dessous de 17-18 % (vol/vol) le manque d'oxygène provoque des suffocations qu'aucun symptôme préalable n'annonce. # A: de vermelding "A" betekent dat dit agens gas of damp vrijgeeft dat of die op zich geen fysiologische werking heeft, maar het zuurstofgehalte in de lucht verlaagt. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.
Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Germany - Occupational Exposure Limits (TRGS 900)	
TRGS 900 Local name	Kohlenstoffdioxid
Occupational exposure limit value (mg/m ³)	9100 mg/m ³
Occupational exposure limit value (ppm)	5000 ppm
Limitation of exposure peaks	2(II)
TRGS 900 Remark	DFG;EU
TRGS 900 Regulatory reference	TRGS900
Switzerland - Occupational Exposure Limits	
Local name	Gaz carbonique / Kohlendioxid
MAK (mg/m ³)	9000 mg/m ³
MAK (ppm)	5000 ppm
Remark	Kritische Toxizität: Asphyxie; Messmethoden: NIOSH
Regulatory reference	www.suva.ch, 01.11.2018
Argon (7440-37-1)	
Belgium - Occupational Exposure Limits	
Local name	Argon # Argon
Remark (BE)	A: la mention "A" signifie que l'agent libère un gaz ou une vapeur qui n'ont en eux-mêmes aucun effet physiologique mais peuvent diminuer le taux d'oxygène dans l'air. Lorsque le taux d'oxygène descend en dessous de 17-18 % (vol/vol) le manque d'oxygène provoque des suffocations qu'aucun symptôme préalable n'annonce. # A: de vermelding "A" betekent dat dit agens gas of damp vrijgeeft dat of die op zich geen fysiologische werking heeft, maar het zuurstofgehalte in de lucht verlaagt. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.
Regulatory reference	Koninklijk besluit/Arrêté royal 02/09/2018
Switzerland - Occupational Exposure Limits	
Local name	Argon / Argon
Remark	Kritische Toxizität: Asphyxie
Regulatory reference	www.suva.ch, 01.11.2018

DNEL (Derived-No Effect Level) : None available.

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

8.2. Exposure controls

8.2.1. Appropriate engineering controls

- : 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
 - Hand protection : Wear working gloves when handling gas containers.
Standard EN 388 - Protective gloves against mechanical risk.
 - Other : Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
 - Respiratory protection : 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.
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 .
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
 - Thermal hazards : None necessary.
- ### **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

- Physical state at 20°C / 101.3kPa : Gas
- Colour : Mixture contains one or more component(s) which have the following colour(s):
Colourless.

Odour : Odourless.

Odour threshold : Odour threshold is subjective and inadequate to warn of overexposure.

pH : Not applicable for gas mixtures.

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

Boiling point : Not applicable for gas mixtures.

Flash point : Not applicable for gas mixtures.

Evaporation rate : Not applicable for gas mixtures.

Flammability (solid, gas) : Non flammable.

Explosive limits : Non flammable.

Vapour pressure [20°C] : Not applicable.

Vapour pressure [50°C]	: Not applicable.
Vapour density	: Not applicable.
Relative density, gas (air=1)	: Heavier than air.
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for gas mixtures.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Viscosity	: Not applicable.
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.

9.2. Other information

Molar mass	: Not applicable for gas mixtures.
Other data	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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.
No data available.

10.4. Conditions to avoid

: Avoid moisture in installation systems.
No data available.

10.5. Incompatible materials

: No data available.
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 toxicological effects

Acute toxicity

: No toxicological effects from this product.
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.

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 : No known effects from this product.
Aspiration hazard : Not applicable for gases and gas mixtures.

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.
 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.

Oxygen (7782-44-7)

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.

Argon (7440-37-1)

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.

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. 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.
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.
Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods.
Return unused product in original container to supplier.

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

13.2. Additional information

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

: None.
External treatment and disposal of waste should comply with applicable local and/or national regulations.

SECTION 14: Transport information

14.1. UN number

UN-No. : 1956

14.2. UN proper shipping name

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

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.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

: 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.

Other information, restriction and prohibition regulations : Ensure all national/local regulations are observed.

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

National regulations

Water hazard class (WGK) : nwg - Non-hazardous to water

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 2015/830.

Section	Changed item	Change	Comments
1.1	Name	Modified	
1.1	Trade name	Modified	

Abbreviations and acronyms	<p>: ATE - Acute Toxicity Estimate</p> <p>CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006</p> <p>EINECS - European Inventory of Existing Commercial Chemical Substances</p> <p>CAS# - Chemical Abstract Service number</p> <p>PPE - Personal Protection Equipment</p> <p>LC50 - Lethal Concentration to 50 % of a test population</p> <p>RMM - Risk Management Measures</p> <p>PBT - Persistent, Bioaccumulative and Toxic</p> <p>vPvB - Very Persistent and Very Bioaccumulative</p> <p>STOT- SE : Specific Target Organ Toxicity - Single Exposure</p> <p>CSA - Chemical Safety Assessment</p> <p>EN - European Standard</p> <p>UN - United Nations</p> <p>ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>IATA - International Air Transport Association</p> <p>IMDG code - International Maritime Dangerous Goods</p> <p>RID - Regulations concerning the International Carriage of Dangerous Goods by Rail</p> <p>WGK - Water Hazard Class</p> <p>STOT - RE : Specific Target Organ Toxicity - Repeated Exposure</p>
Training advice	: None.
Further information	<p>: 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.</p> <p>Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).</p>

Full text of H- and EUH-statements

Ox. Gas 1	Oxidising Gases, Category 1
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H270	May cause or intensify fire; oxidiser.
H280	Contains gas under pressure; may explode if heated.

DISCLAIMER OF LIABILITY	<p>: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.</p> <p>Details given in this document are believed to be correct at the time of going to press.</p> <p>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.</p>
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