



Product Service

CERTIFICATE

No. Z1A 09 06 55642 003

Holder of Certificate:

Factory(ies): 55642

Certification Mark:



Product: Transportation vessels
Pressure Gas Containers

Model(s):
CN08
CN12
CN16
NN08
NN16

| | | |
|--------------------|------------------------|--------|
| Parameters: | Dimension: | CN08 |
| | Filling weight: | 8g |
| | Nominal volume: | 11ml |
| | Blowing gas: | CO2 |
| | Identification colour: | Gold |
| | Length: | 66,1mm |
| | Diameter d1: | 18,1mm |
| | Diameter d2: | 8,5mm |

Further parameter see attachment 1.

Tested according to: PPP 52127:2008
ZEK 01.2-08

The product meets the requirements of the German Equipment and Product Safety act. The certification marks shown above can be affixed on the product. It is not permitted to alter the certification marks in any way. In addition the certificate holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. See also notes overleaf.

Test report no.: 028-71344346-001

Valid until: 2014-06-07

Date, 2009-06-10

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Firm:



Product Service

Parameter

| | | | | | |
|------------------------|-----------------|-----------------|-----------------|------------------|------------------|
| Dimension: | CN08 | CN12 | CN16 | NN08 | NN16 |
| Filling weight: | 8g | 12g | 16g | 8g | 16g |
| Nominal volume: | 11ml | 15ml | 22ml | 11ml | 22ml |
| Blowing gas: | CO ₂ | CO ₂ | CO ₂ | N ₂ O | N ₂ O |
| Identification colour: | Gold | Gold | Gold | Silver | Silver |
| Length: | 66,1mm | 83,3mm | 88,4mm | 65,4mm | 87,2mm |
| Diameter d1: | 18,1mm | 18,8mm | 22,1mm | 18,1mm | 22,2mm |
| Diameter d2: | 8,5mm | 7,4mm | 8,7mm | 8,5mm | 8,8mm |

Munich, 2009-06-10

Martin Schmied



Safety Data Sheet

According to Regulation (EC) No 1907/2006 (REACH)

Creation data : 29.02.2012

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Revision data : 29.06.2012

1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier:

Product name: 8 g N2O chargers

CAS: 10024-97-2

EC No (from EINECS): 233-032-0

REACH registration No.: Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH),
exempted from registration

Additional identification: N/A

1.2 Relevant identified uses of the substance and uses advised against:

1.2.1 Relevant identified uses

General uses

1.2.2 Uses advised against:

Not available.

1.3 Details of the supplier of the safety data sheet:

1.4 Emergency telephone Number: +886 5 6361867

2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification:

Oxygen levels below 19.0% may cause asphyxia. Nitrous oxide exposure can cause nausea and respiratory problems. High concentrations may cause vasodilation leading to circulatory collapse. Warning! Pressurized container; protect from sunlight; do not expose to temperatures exceeding 50°C (122°F); keep out the reach of children; never dispose of full container, never force open.

2.2 Label elements

Labelling Pictograms



Signal word:

Warning

Hazard Statements

H270 May cause or intensify fire; oxidizer.

H280 Contains gas under pressure; may explode if heated.

EIGA-As Asphyxiant in high concentrations.

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3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.

Components/Impurities

Nitrous Oxide.

CAS No: 10024-97-2

Index-Nr.: -

EC No (from EINECS): 233-032-0

REACH Registration number:

Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH),
exempted from registration.

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

4: FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 Inhalation : Conscious persons should be assisted to an uncontaminated area and
inhale
fresh air. Quick removal from the contaminated area is most important.
Unconscious persons should be moved to an uncontaminated area, given
assisted resuscitation and supplemental oxygen. Further treatment should
be symptomatic and supportive.

4.1.2 Ingestion : None

4.1.3 Skin Contact : Flush affected areas with lukewarm water. DO NOT USE HOT WATER. A
physician should see the patient promptly if the cryogenic "burn" has
resulted in blistering of the dermal surface or deep tissue freeezing.

4.1.4 Eye Contact : Persons with potential exposure to liquid nitrous oxide should not wear
contact wear contact lenses.

5: FIRE-FIGHTING MEASURES

| | | | |
|---------------------------|---|----------------------|---------------------|
| Flash Point (Method Used) | Flammable Limits | LEL : Not applicable | UEL: Not applicable |
| Non - flammable | Autoignition Temperature : Not determined | NFPA Class : None | |

General Hazards :

Product is not flammable or combustible. Products of combustion include compounds of carbon,
hydrogen and oxygen, including carbon monoxide.

Extinguishing Media

Carbon dioxide, water, water fog, dry chemical, chemical foam.

Fire Fighting Procedures

Self - contained respiratory equipment; cool containers to prevent pressure buildup and possible
explosion when exposed to extreme heat.

Unusual Fire and Explosion Hazards

Closed containers can explode due to buildup of pressure when exposed to extreme heat. Contents
under pressure. Do not use or store near heat sources.

Hazardous Combustion Products

Smoke, fumes or vapors, oxides of carbon.

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6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions

Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.

6.2 Environmental precautions:

Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Clean up methods

Ventilate area.

7: HANDLING AND STORAGE

Handling : Keep container closed when not in use; protect containers from abuse; protect from extreme temperatures, keep away from sources of heat. Do not puncture container. Do not attempt to refill container. Keep away from direct sunlight and heat. Never dispose of full chargers. Never force open. Keep out of reach of children and minors. If container is punctured, gas will escape and freeze container, use hand-protection and obviate direct contact with container to avoid cold-burns.

Storage : Do not heat. Maximum environmental temperature in use not to exceed 50°C (122°F). Store in a cool and dry location.

Packaging materials Recyclable steel

Recommended use : Use original container.

8: EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering controls : Nitrous oxide is noncorrosive and may be used with any common structural material. Nitrous oxide oxidizes some metals at elevated temperatures. See Liquid Air's Gas Encyclopedia.

Personal protection

Respiratory system : None required while threshold limits are kept below maximum allowable concentrations; if TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.

Protective gloves : Utilize appropriate gloves for protection needed from cold, based on exposure.

Eye Protection : Chemical safety goggles. Refer to 29 CFR 1910.101 .

Other protective clothing or equipment : Safety eyewash station nearby.

Work/Hygienic practices : Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

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9: PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties of N2O (E942--99% N2O)

| | | |
|--|----------------------------|----------------------------|
| Vapor pressure at 20 °C (68 °F) : | 58.5 kg/cm2 | |
| Vapor density at 20 °C (68 °F), 1 atm (Air = 1.53 | | |
| Evaporation point : | Not Available | |
| Melting point (CO2 Sublimes) : | - 90.86° C (- 132° F) | |
| Boiling point : | - 88.48° C (- 127° F) | |
| Specific gravity : | Not Available | |
| Solubility (H2O) : | 1.50 g/L at 15 °C, 100 kPa | |
| Odor and appearance : | A colorless, odorless gas. | |
| Pressure / Temperature | 52 bar at 20 °C | 750 lbf/in2 at 68 °F |
| Characteristics at filling density of 0.78 kg/liter : | 185 bar at 50 °C | 2680 lbf/in2 at 122 °F |
| | 290 bar at 70 °C | 4200 lbf/in2 at 158 °F |
| | 425 bar at 100 °C | 6160 lbf/in2 at 212 °F |
| | 470 bar at 110 °C | 6815 lbf/in2 at 230 °F |
| Parameter of 8g N2O charger | <u>METRIC UNITS</u> | <u>US / IMPERIAL UNITS</u> |
| Overall Length (approx) : | 65 mm | 2.56 in |
| Body Diameter : | 18 mm | 0.709 in |
| Neck Diameter : | 8.7 mm | 0.343 in |
| Internal Volume (approx) : | 10.3 ml min. | 0.63 in ³ min. |
| Net weight of N2O (approx) : | 8 g | 0.32 oz |
| Tare wt. of charger (approx) : | 21 g | 0.84 oz |
| Gross wt. of charger (approx) | 29 g | 1.16 oz |
| Bursting pressure : | >500 bar | >7250 lbf/in ² |

10: STABILITY AND RELIABILITY

| | |
|---|---|
| Stability : | The product is stable. |
| Materials to avoid : | Strong oxidizers, strong acids. |
| Hazardous Decomposition Products : | Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes or vapors, and smoke may be produced. |

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11: TOXICOLOGICAL INFORMATION

| Hazardous Ingredients | CAS # | EINECS # | LD50 of Ingredient (Specify Species and Route) | LC50 of Ingredient (Specify Species) |
|-----------------------|------------|-----------|---|---|
| Nitrous oxide | 10024-97-2 | 233-032-0 | Information not found | Inhalation-Rat 1068 mg/m ³ /4 h |

12: ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Based on the chemical composition of this product it is assumed that the mixture can be treated in an acclimatized biological waste treatment plant system in limited quantities. However, such treatment should be evaluated and approved for each specific biological system. None of the ingredients in this mixture are classified as a Marine Pollutant.

13: DISPOSAL CONSIDERATIONS

Waste Disposal Method : Dispose of in accordance with Local, State, and Federal Regulations. This product may produce concentrated hazardous vapors in a disposal container creating a dangerous environment. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals. Do not flush to sanitary sewer or waterway.

14: TRANSPORT INFORMATION

Non hazardous

UN No : UN 1070 NITROUS OXIDE
Class: 2.2
Title : Receptacles, small, containing gas (gas cartridges)
Receptacles with capacity not exceeding 50 ml containing only non-toxic constituents, are not subject to provisions of IMDGC

15: REGULATORY INFORMATION

EU Regulations Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

Hazard symbol(s) :



Classification : Harmful
Risk Phrases : R8- In use, may form flammable/explosive vapour-air mixture .
Safety Phrases : S38 - In case of insufficient ventilation, wear suitable respiratory equipment.
Contains : N2O

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16: OTHER INFORMATION

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on Information from similar products, the ingredients, technical literature, and/or professional experience.

| | | |
|---------------------|-----------------|-------------------------------------|
| HMIS Hazard Ratings | Health | * = Chronic Health |
| | 1 | Hazard |
| | Flammability | 0 = Insignificant 2 = Moderate |
| | 0 | 1 = Slight 3 = High |
| Physical Hazard | | 4 = Extreme |
| 0 | Safety Glasses, | |
| Personal Protective | Gloves | |