SAFETY DATA SHEET
(According to CLP and REACH regulations)

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1.1. Identification of the substance or preparation

Product/Készítmény name: **Nitrous oxide supplied in cartridges**
CAS number: 10024-97-2
EINECS number: 233-032-0

1.2. Application of the materials/products

industrial, food and/or medical application

1.3. Supplier

Manufacturer/ Supplier: United Brands Product Design Development and Marketing Inc.
Address: 170 Associated Rd., South San Francisco, CA 94080, U.S.A
Tel.: 800-500-0583 Fax: 650-588-8568

Distributor:
United Brands Product Design Development and Marketing Inc.
Address: 170 Associated Rd., South San Francisco, CA 94080, U.S.A
Tel.: 800-500-0583 Fax: 650-588-8568

Responsible for safety data sheet:
United Brands Product Design Development and Marketing Inc.
Address: 170 Associated Rd., South San Francisco, CA 94080, U.S.A
Tel.: 800-500-0583 Fax: 650-588-8568

1.4. Emergency telephone

CHEMTREC: 800-424-9300

2. HAZARD IDENTIFICATION

2.1. Classification according to Regulation No 1272/2008/EC

GHS label elements

GHS03  GHS04

**WARNING**

Category
Oxid. gas: 1 category, Gases under pressure, liquefied gas,

Hazard Statements (H-phrases)
H270 - May cause or intensify fire; oxidiser.
H280 - Contains gas under pressure; may explode if heated.

Precautionary Statements (P-phrases)
P244 - Keep reduction valves free from grease and oil.
P220 - Keep/Store away from clothing/.../combustible materials.
P370+P376 - In case of fire: Stop leak if safe to do so.
P403 - Store in a well-ventilated place.

Supplemental hazard information

2.2. Classification according to Directive 67/548/EEC or Directive 1999/45/EC

O - oxidizing  Xn - harmful
Nitrous oxide supplied in cartridges

Risk phrases
R8 - Contact with combustible material may cause fire.
R40 - Limited evidence of a carcinogenic effect.

Danger signs
S1/2 - Keep locked up and out of the reach of children.
S9 - Keep container in a well-ventilated place.
S17 - Keep away from combustible material
S21 - When using do not smoke.
S36/37/39 - Wear suitable protective clothing and eye/face protection.
S38 - In case of insufficient ventilation, wear suitable respiratory equipment.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3. Other dangers

2.3.1. Health effects
risk of suffocation,

2.3.2. Environmental effects
no information available,

2.3.3. Physical and chemical danger
oxidizing agent, assisted combustion,

2.3.4. Specific dangers
no data

3. COMPOSITION/INFORMATION ON INGREDIENTS

10024-97-2 Nitrous oxide supplied in cylinder
8-40
GHS03 GHS04
Oxid. gas: 1 category, Gases under pressure, liquefied gas, H270-H280

(You can see full text of R and H sentences at 16 point.)

4. FIRST AID MEASURES

Inhaling
remove the wounded to fresh air, when unconscious without delay artificial respiration or oxigen inhalation, medical treatment is needed,

Eyes
wash out immediately with plenty of water for at least 15 minutes,

Skin
risk of chilblain, thaw frostbite slowly with lukewarm water, prohibited to remove clothes, medical treatment is needed,

Swallowed
no adverse effects anticipated, Do not eat or drink during work- no smoking.

Symptoms and effects, both acute and delayed
inhalation of small amounts cause laughter, intoxicating, pulsating sound and visual hallucinations, in greater amount cause anesthetic and narcotic (laughing gas).
5. FIREFIGHTING MEASURES

Fire-hazard class:: C Highly flammable

5.1. Adequate extinguishing materials:
use extinguishing material suitable to the near fire circumstances,

5.2. Inadequate extinguishing materials
water jet prohibited,

5.3. Dangerous decomposition products
no data

5.4. Special protection equipment for firemen
Wear self-contained breathing apparatus pneumatic breathing-mask, closed industrial protecting clothing,

5.5. Specific dangers
no data

5.6. Specific methods
no data

6. ACCIDENTAL RELEASE MEASURES

6.1. Measures for personnel protection:
put on the protective equipment, evacuate the area and close for the traffic, keep upwind,

6.2. Measures for enviroment protection
if possible stop the leakage, prevent that the substance in gutter, hole and collar gets, when the substance gets in gutter or water, notify the local authorities,

6.3. Methods of decontamination
let's fresh air in the area, warn everybody, when in liquid form is: do not use sawdust or other combustible absorbents, enclose with a dam the outstreamed substance, cover blot off with dry sand, suitable material, in closed vessel carry to destroying place,

6.4. Reference to other sections
Find the personal protective equipments in the 8.

7. HANDLING AND STORAGE

7.1. Handling

7.1.1. Technical precautions
ventilation should be provided, it is recommended to use protective equipments,

7.1.2. Safe handling guidance
avoid the product getting on the skin, in the eyes, on the clothes, avoid breathing its fume, prevent that the substance comes in contact with water, equipment that is suitable for this product and for the designed pressure and temperature should be used.

7.2. Storage

7.2.1. Technical measures/storage conditions
in a cool, dry, well ventilated place, Store in a cool, dry well-ventilated area. keep away from heat, sources of ignition, in original, closed packing, protected direct sunlight,
7.2.2. **Incompatible products**

reacts violently with sulphurous anhydride, amorphous boron, phosphine, ethers, aluminum, hydrazine, phenyl lithium and tungsten carbide causing fire and explosion hazard, the gas strong oxidising agent above 300 °C and may form explosive mixtures with ammonia, carbon monoxide, hydrogen sulfide, oil, grease and fuels.

7.2.3. **Packaging materials**

in retail boxes and/or in bulk

7.3. **Special application**

no data

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8. **EXPOSURE CONTROLS – PERSONAL PROTECTION**

8.1. **Exposure limit values**

<table>
<thead>
<tr>
<th>ingredients:</th>
<th>AK value (mg/m³)</th>
<th>CK value (mg/m³)</th>
<th>MK value (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrous oxide supplied in cylinder</td>
<td>180</td>
<td>720</td>
<td></td>
</tr>
</tbody>
</table>

8.2. **Exposure control**

ventilation should be provided, it is recommended to use protective equipments, avoid breathing its fume, avoid the product getting on the skin, in the eyes, on the clothes,

8.2.1. **Workplace exposure control**

8.2.1.1. **Respiratory protection:**

inadequate exhaust or ventilation use respiratory protection, in enclosed space a respirator that is independent from the ambient air should be used, Use self-contained breathing apparatus.

8.2.1.2. **Hand protection:**

protective gloves,

8.2.1.3. **Eyes protection:**

tightly closing protective goggles (EN 166),

8.2.1.4. **Protection of skin and body surface:**

protective apron, safety shoes (MSZ EN 345-1, SB)

8.2.2. **Environmental exposure control**

prevent that the substance in gutter, hole and collar gets,

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9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1. **General informations**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquefied gas,</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless,</td>
</tr>
<tr>
<td>Odour</td>
<td>sweetish odor,</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°C)</td>
<td>Nincs adat/no data</td>
</tr>
<tr>
<td>Ignition temperature (°C)</td>
<td>-88,5°C</td>
</tr>
<tr>
<td>Explosive limit:</td>
<td>Nincs adat/no data</td>
</tr>
<tr>
<td>- lower:</td>
<td>Nincs adat/no data</td>
</tr>
<tr>
<td>- upper:</td>
<td>Nincs adat/no data</td>
</tr>
</tbody>
</table>
Nitrous oxide supplied in cartridges

<table>
<thead>
<tr>
<th>Oxidize facility:</th>
<th>nincs adat/no data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Pressure (20°C):</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Gravity (20°C):</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Specific gravity (water=1), (20°C):</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Solubility:</td>
<td></td>
</tr>
<tr>
<td>- Water:</td>
<td>2.2 mg/l</td>
</tr>
<tr>
<td>- Other solvents:</td>
<td>no data</td>
</tr>
<tr>
<td>Distribution coefficient (n-octanol/water):</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>1.5</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>nincs adat/no data</td>
</tr>
<tr>
<td>Other items:</td>
<td>critical temperature: 36.4°C, critical pressure: 72.4 bar, the critical density: 0.452 g/cm³, Filling pressure: 7MPa (1,015psi) Pressure at 50 °C: 16.5MPa (2,425psi), Burst pressure: min. 45 MPa</td>
</tr>
</tbody>
</table>

9.2. Other Information
- Melting Point (°C): -90.81°C
- Flash-point (°C): nincs adat/no data

10. STABILITY AND REACTIVITY

10.1. Reactivity
stable under normal conditions,

10.2. Chemical stability
there is no decomposition under normal condition,

10.3. Possibility of hazardous reactions
reacts violently with sulphurous anhydride, amorphous boron, phosphine, ethers, aluminum, hydrazine, phenyl lithium and tungsten carbide causing fire and explosion hazard,

10.4. Conditions to avoid
keep away from heat, flames, sparks and ignition sources,

10.5. Incompatible materials
organic, combustible material,

10.6. Hazardous decomposition products
nitrogen monoxide

11. TOXICOLOGICAL INFORMATION

Actual material
Nitrous oxide supplied in cartridges

11.1. Acute toxicity

11.1.1. After inhaling
In animals:
no data

11.1.2. When swallowed
In animals:
no data

11.1.3. In case of contacting skin
In animals:
no data
11.2. Local effects
11.2.1. After inhaling
   no data
11.2.2. In case of contacting skin
   no data
11.2.3. In case contacting eyes
   no data
11.3. Sensibility
   no data
11.4. Chronic toxicity
   no data
11.5. Specific effects
11.5.1. Genotoxicity
   no data
11.5.2. Carcinogenity
   no data
11.5.3. Reproductive toxicity
   no data

12. ECOLOGICAL INFORMATION

Actual material
   Nitrous oxide supplied in cartridges
12.1. Ecotoxicity
12.1.1. Water toxicity
   no data
12.1.2. Terrestrial toxicity
   no data
12.1.3. Behaviour in waste water treatment plants
   no data
12.2. Mobility
   no data
12.3. Biological persistence
12.3.1. General
   no information available,
12.3.2. In water
   no data
12.3.3. In air
   no data
12.3.4. In soils and sediments
   no data
12.4. Bioaccumulative potential
   no data
12.5. Results of PBT and vPvB assessment
   no data
12.6. Other adverse effects
   prevent that the substance in water, agricultural land and gutter gets, when the substance gets in gutter or water, notify the local authorities,
13. DISPOSAL CONSIDERATIONS

13.1. Material disposal
Any product originated from the use of the substance or preparation and unsuitable for further utilisation, as well as the tools and packing materials, should be delivered to an approved deposit for recycling or neutralisation. Observe all state and local environmental regulations.

13.2. Package disposal
Observe all state and local environmental regulations, the packaging has to be used, like product.

13.3. EWC number
15 01 05

14. TRANSPORT INFORMATION

UN number
2037

ADR/ADN/RID
Proper shipping name: Receptacles, small, containing gas (Gas Cartridges)
Technical/Trade name: Nitrous oxide supplied in cartridges
Hazard class: 2
Labels: 2.2 + 5.1
Classification code: 5O
Packing group: -
Hazard identification number: 25
Hazard of environment: NO
Tunnel restriction code: (E)

IMDG
Proper shipping name: Receptacles, small, containing gas (Gas Cartridges)
Technical/Trade name: Nitrous oxide supplied in cartridges
Hazard class: 2
Labels: 2.2 + 5.1
Packing group: -
EmS: F-D,S-U,
Marine pollutant: NO

IATA
Proper shipping name: Gas cartridges
Technical/Trade name: Nitrous oxide supplied in cartridges
Hazard class: 2.2
Labels: 2.2 (5.1)
Packing group: -
PAX: 203
CAO: 203
UN Number: 2037

15. REGULATORY INFORMATION

15.1. Seveso category
3. - Oxidising agents,

15.2. Storage category
2A storage class: Compressed, liquefied or dissolved under pressure gases,
15.3. **Nitrous oxide supplied in cartridges**

Date: 2005.05.17.
Date of revision: 2016.02.15.
Site: 8/9
Version: 2

### 15.4. Important national regulations related to the product

- **WGK 1**

**Act No. XCIII/1993 on work safety, and the related regulations**
- **Act No. XLIII/2000 on waste management**
- **Act No. XXVI/2000 on chemical safety**
- **Gov. Decree No. 98/2001 (VI. 15.) on the conditions of pursuing waste-related activities**
- **Decree No. 25/1996 (VIII. 28.) of the Minister of Public Health on the general health requirements of working and work conditions without health risks**
- **Decree No. 26/1996 (VIII. 28.) of the Minister of Public Health on the limitations of the (weekly, daily) exposure time of workers employed under certain health risks**
- **Decree No. 28/2011. (IX. 6.) of the Minister of Internal Affairs on issuing the National Fire Protection Rules**
- **Decree No. 44/2000. (XII. 20.) of the Minister of Health on the detailed rules of certain procedures and activities related to hazardous substances and hazardous products**
- **Joint Decree No. 25/2000 (IX. 30.) of the Minister of Health and of the Minister of Social and Family Affairs on the chemical safety of workplaces, EüM decree no.**
- **The European Community and Regulation 1907/2006/EC on the registration, evaluation, approval and restriction of chemicals (REACH)**

### 15.5. Other relevant national regulations

- **Joint Decree No. 25/2000 (IX. 30.) of the Minister of Health and of the Minister of Social and Family Affairs on the chemical safety of workplaces**
- **EWC code numbers: Decree No. 16/2001 (VII. 18.) of the Minister for the Environment on the lists of waste, as amended by Decree No. 10/2002 (III. 26.) of the Minister for the Environment**
- **Road Transport Department: Act 19 of 1979 and decree no. 71/2011 (XII. 8.) amending KPM decree no. 20/1979 (IX. 18.)**

### 15.6. Chemical safety assessment

**no data**

**16. OTHER INFORMATION**

**The review affected this chapters:**

1.3, 3.3.3, 3.3.4, 4.2, 4.5, 4.6, 5.5, 5.6, 6.4, 7.2.2, 7.2.3, 7.3, 8.1, 8.2.1.1, 10.2, 10.5, 10.6, 10.7, 11.1.1, 11.1.2, 11.1.3, 11.2.3, 11.2.2, 11.2.1, 11.3, 11.4, 11.5.1, 11.5.2, 11.5.3, 12.1.1, 12.1.2, 12.1.3, 12.2, 12.3.1, 12.3.2, 12.3.3, 12.4, 12.6, 12.5, 14, 15.14, 15.11, 15.10, 16.3

**Risk phrases**

R8 - Contact with combustible material may cause fire.
R40 - Limited evidence of a carcinogenic effect.

**H- phrases**

H270 - May cause or intensify fire; oxidiser.
H280 - Contains gas under pressure; may explode if heated.

**16.1. General information**

This information relates TO THE PRODUCT AS SUCH and is in compliance with the specifications of the enterprise. In case of products and mixtures, it should be ensured that no new risks arise.

The information on this data sheet is based on our best knowledge at the time of printing the safety data sheet and is provided in good faith. However, certain data are being reviewed.

Users should note the potential for additional risks in case of using the product for purposes other than the recommended application. This data sheet may be used and reproduced for prevention and safety purposes only. The references to legislation, regulations and practical rules, and documents should not be considered complete.

It is the responsibility of the person receiving the product to consult all documents related to the use and handling of the product.

The responsibility of parties handling the product also includes to pass on the whole of the information listed on the safety data sheet and necessary for work safety and for the protection of health and the environment, to the next person who may get in contact in any way with the product (use, storage, cleaning of containers, other operations).

**16.2. Technical advisory services**

United Brands Product Design Development and Marketing Inc.
Address: 170 Associated Rd., South San Francisco, CA 94080, U.S.A
Tel.: 800-500-0583 Fax: 650-588-8568
16.3. Sources

United Brands Product Data Sheet

16.4.