

# Safety Data Sheet

**Product :**

**Nitrous oxide**

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MSDS Nr : 301-00-0001BOC(U)

Version : 1.02

Date : 17/08/2000

Replaces version dated : 23/03/1998

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name	Nitrous oxide
Chemical formula	N2O
Company identification	see heading and/or footer
Emergency phone numbers	see heading and/or footer

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation	Substance.
Components/Impurities	Contains no other components or impurities which will influence the classification of the product.
CAS Nr	10024-97-2
EEC Nr (from EINECS)	233-032-0

## 3 HAZARDS IDENTIFICATION

Hazards identification	Liquefied gas Oxidant. Strongly supports combustion. May react violently with combustible materials.
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## 4 FIRST AID MEASURES

Inhalation	In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact	In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Immediately flush eyes thoroughly with water for at least 15 minutes. Obtain medical assistance
Ingestion	Ingestion is not considered a potential route of exposure.

## 5 FIRE FIGHTING MEASURES

Specific hazards	Supports combustion. Exposure to fire may cause containers to rupture/explode. Non flammable
Hazardous combustion products	If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Nitric oxide/nitrogen dioxide

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Suitable extinguishing media

All known extinguishants can be used.

Specific methods

If possible, stop flow of product.

Move away from the container and cool with water from a protected position.

Special protective equipment for fire fighters

Use self-contained breathing apparatus.

## 6 ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area.

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

Ensure adequate air ventilation.

Eliminate ignition sources.

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 and storage

Use no oil or grease.

Open valve slowly to avoid pressure shock.

Segregate from flammable gases and other flammable materials in store.

Suck back of water into the container must be prevented.

Do not allow backfeed into the container.

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.

Keep away from ignition sources (including static discharges).

Refer to supplier's container handling instructions.

Keep container below 50°C in a well ventilated place.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country

UK: Nitrous oxide - LTEL: 100ppm (EH40/2000)

Personal protection

Do not smoke while handling product.

Ensure adequate ventilation.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight

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Melting point	-90.81 °C
Boiling point	-88.5 °C
Critical temperature	36.4 °C
Relative density, gas	1.5 (air=1)
Relative density, liquid	1.2 (water=1)
Vapour Pressure 20°C	50.8 bar
Solubility mg/l water	2.2 mg/l
Appearance/Colour	Colourless gas
Odour	Sweetish Poor warning properties at high concentrations.
Autoignition temperature	Not applicable
Flammability range	Oxidiser.
Other data	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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## 10 STABILITY AND REACTIVITY

Stability and reactivity	May react violently with combustible materials May react violently with reducing agents. Violently oxidises organic material.
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## 11 TOXICOLOGICAL INFORMATION

General	In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
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## 12 ECOLOGICAL INFORMATION

General	When discharged in large quantities may contribute to the greenhouse effect.
Global warming factor	310 (CO <sub>2</sub> =1)

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## 13 DISPOSAL CONSIDERATIONS

General	Discharge to atmosphere in large quantities should be avoided. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.
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## 14 TRANSPORT INFORMATION

UN Nr	1070
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Class/Div	2.2
Subsidiary risk	5.1
ADR/RID Item Nr	2,2° O
ADR/RID Hazard Nr	25
Labelling ADR	Label 2: non flammable non toxic gas Label 05: fire intensifying risk.
Other transport information	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 that they are firmly secured and: - cylinder valve is closed and not leaking - valve outlet cap nut or plug (where provided) is correctly fitted - valve protection device (where provided) is correctly fitted - there is adequate ventilation. - compliance with applicable regulations.

## 15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	Not included in Annex I.
EC Classification	O;R8
-Symbols	O: Oxidising
Labelling of cylinders	
-Symbols	Label 2: non flammable non toxic gas Label 05: fire intensifying risk.
-Risk phrases	R8 Contact with combustible material may cause fire.
-Safety phrases	S9 Keep container in well ventilated place. S17 Keep away from combustible material.

## 16 OTHER INFORMATION

Ensure all national/local regulations are observed.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Contact with liquid may cause cold burns/frost bite.

Users of breathing apparatus must be trained.

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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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**End of document.**

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